DU MONT TUBES FOR SCIENCE • INDUSTRY • THE MILITARY

FAIRCHILD
DU MONT LABORATORIES
DIVISIONS OF FAIRCHILD CAMERA AND INSTRUMENT CORPORATION
ELECTRONIC TUBE DIVISION • CLIFTON, N. J.

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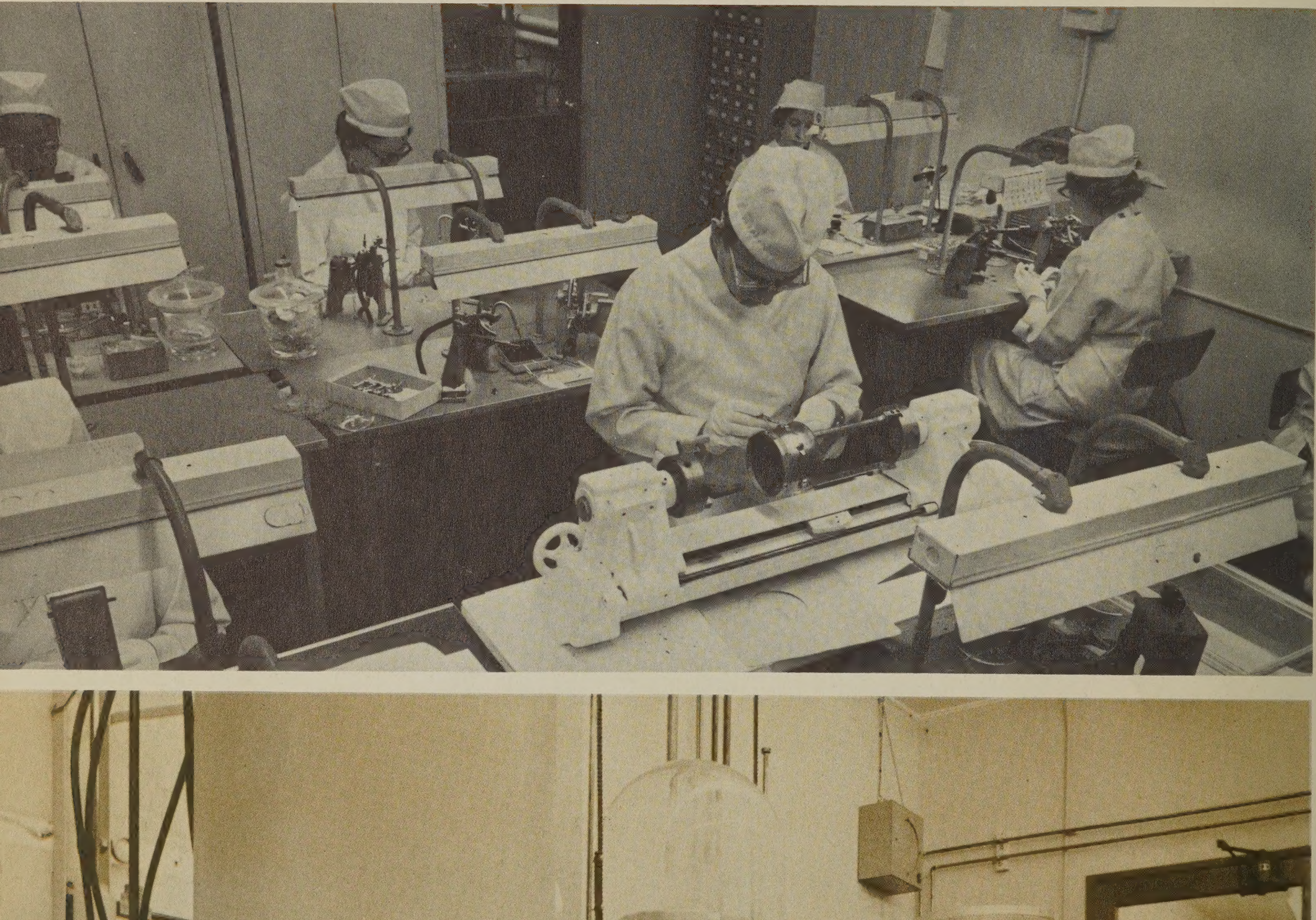
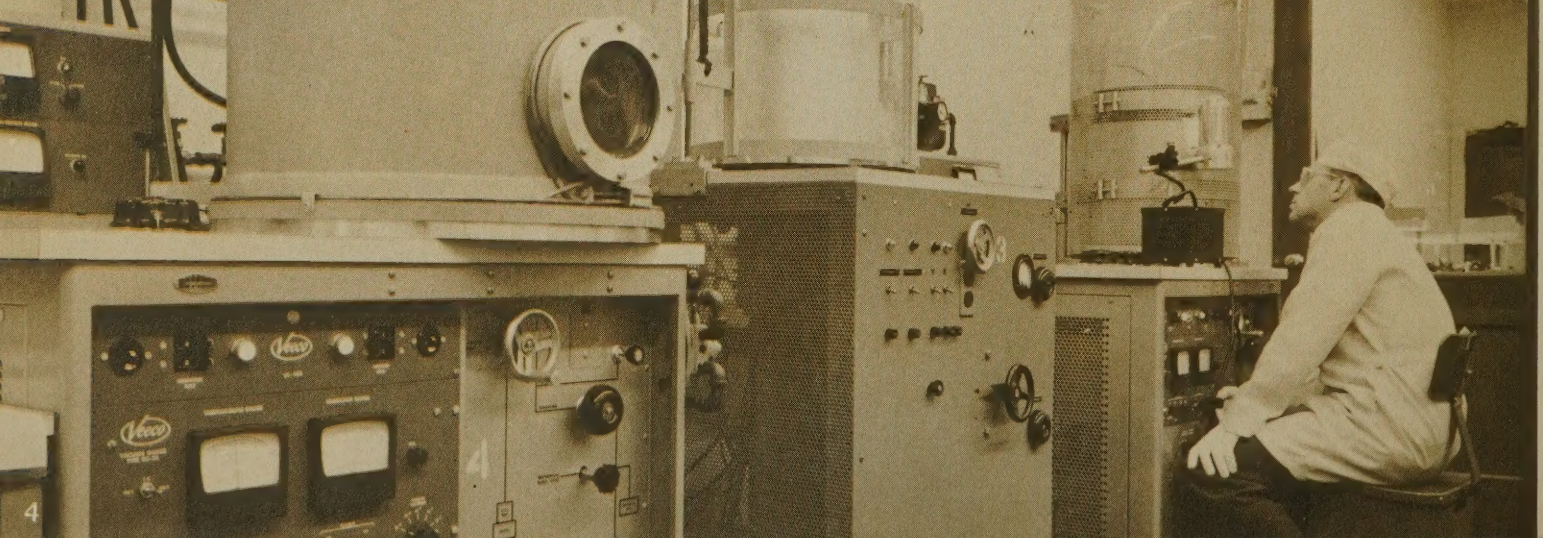
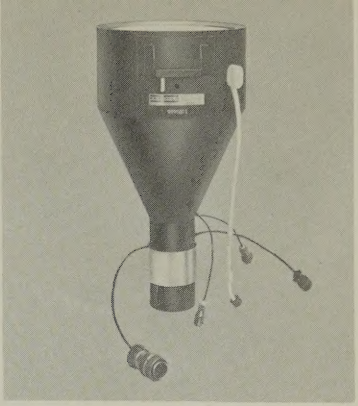
Settling operation in application
of phosphor screen
on cathode-ray tubes.

THE MOST EXTENSIVE TUBE RESEARCH AND DEVELOPMENT





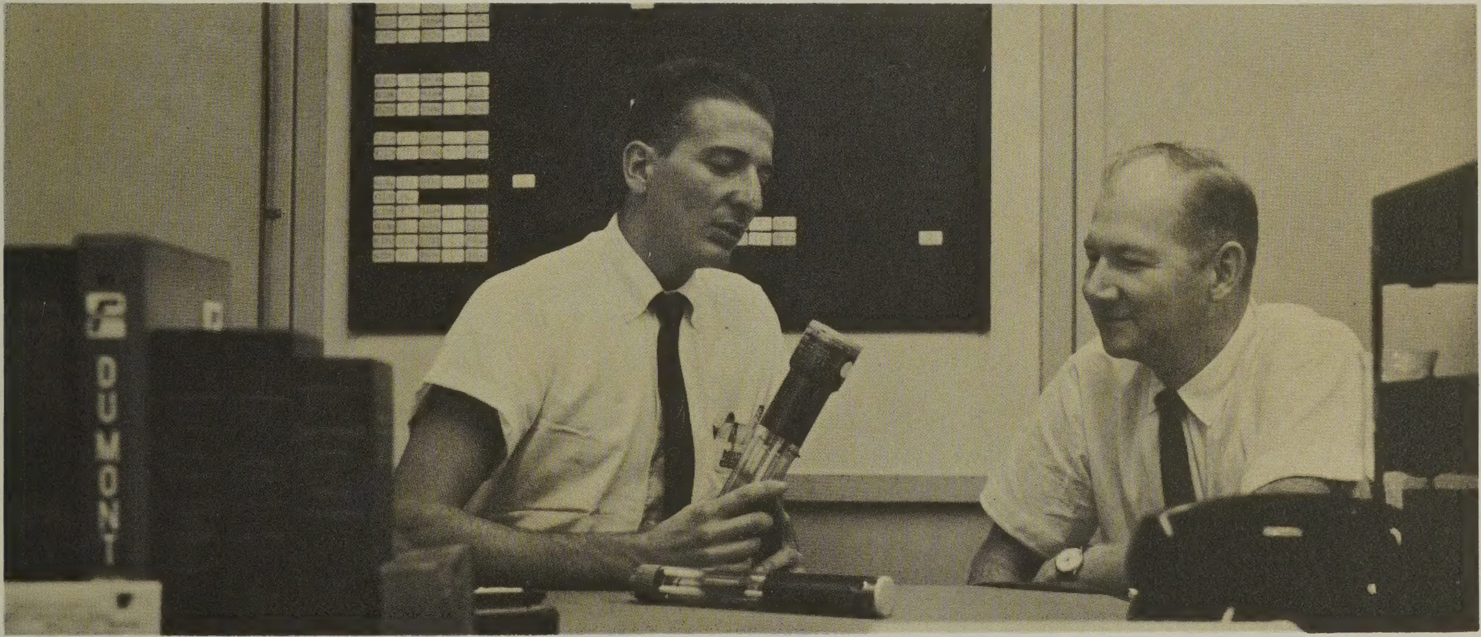
FACILITY IN THE INDUSTRY



Completely potted direct-view storage tube with an integral shield and high voltage connector.

Evolution of the cathode-ray tube from a laboratory curiosity to a practical, working tool of science and industry was Du Mont's initial goal when the organization was founded over thirty years ago. Realization of this goal was Du Mont's first major achievement.

Today, over 4000 tube types later, Du Mont still holds a commanding lead in basic research, product development and production techniques in areas including cathode-ray tubes, storage tubes, photomultiplier tubes and other specialized electronic devices. And combined with the extensive facilities of the Fairchild Camera and Instrument Corporation, Du Mont provides a depth of understanding and experience that is unparalleled in the industry.



Special engineering design, cathode-ray tubes. Du Mont engineers are available to work on your specialized applications.

CUSTOM ENGINEERING

While Du Mont's "catalog line" of tubes has been carefully selected to meet the great majority of standard requirements, specialized applications frequently demand other characteristics — electrical and mechanical — that are beyond the ordinary, or even outside the current "state of the art." In such instances, Du Mont's Tube Research and Development Laboratory, the most extensive of its type, will either modify existing designs, or create wholly new ones, as the specific application requires.

Some early examples of Du Mont tube design. Many changes and improvements have been made over the past 30 years.

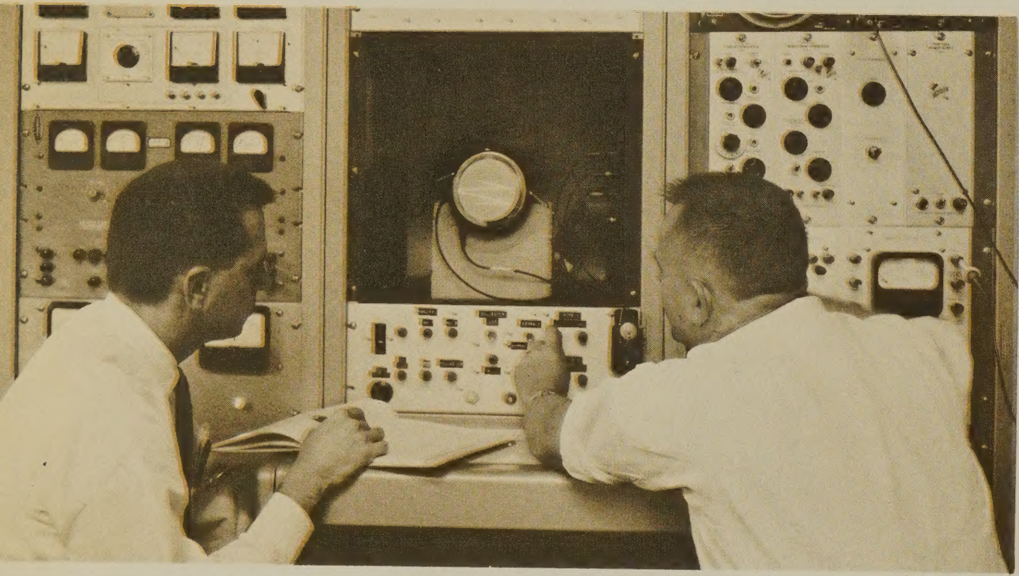
Top left — Storage tube assembly in Du Mont's contamination-free clean room facility.

Bottom left — A step in the manufacture of storage tubes utilizing high vacuum evaporation techniques.

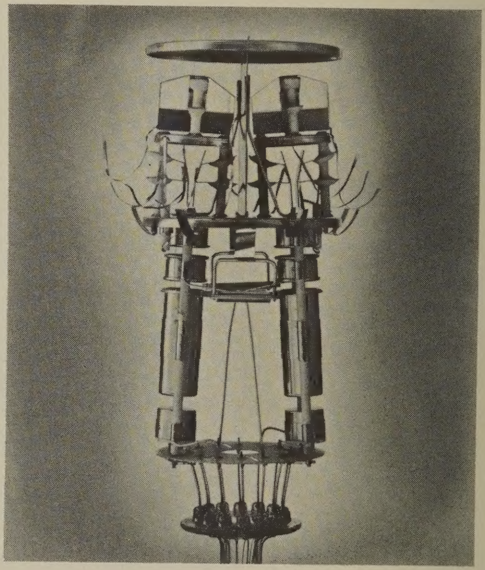
APPLICATIONS ENGINEERING

In many instances the solution to a specialized tube problem does not end with the custom-designed or modified tube. Creation of associated circuitry, such as power supplies, amplifiers or regulating circuits, for example, may require equally specialized knowledge, as may design of such "hardware" as magnetic shields, clamps, bases or connectors.

Du Mont offers not only the capacity to solve highly specialized tube problems, but also, through its Applications Engineering Department, provides consultation on how best to put the tube to work, from the electrical, mechanical and environmental standpoints.

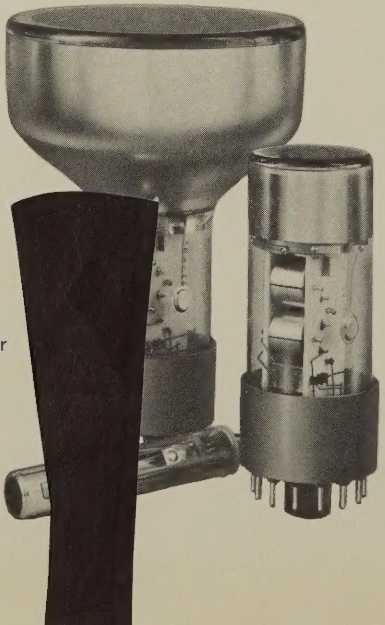


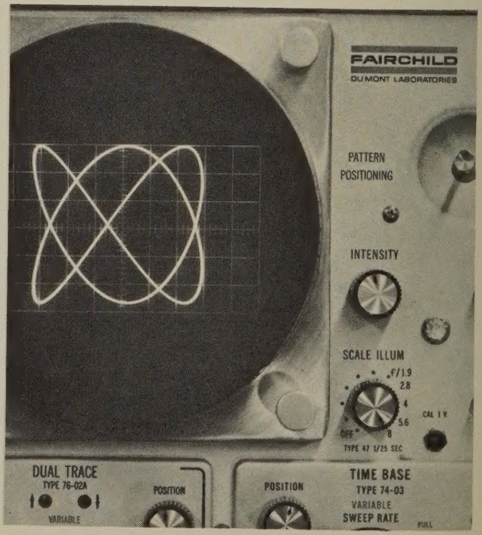
Evaluating results of engineering test on direct-view storage tubes.



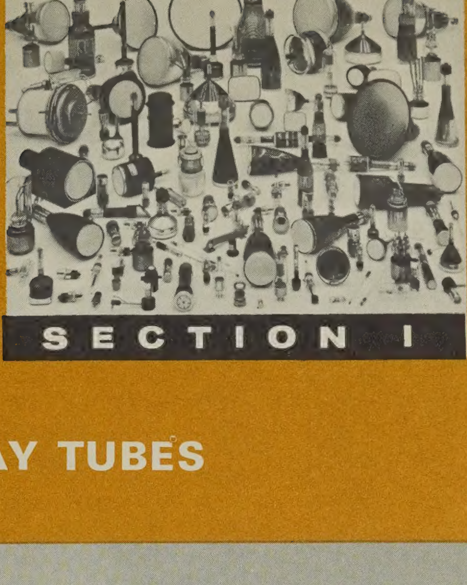
Electron gun mount for a Du Mont dual beam tube.

Typical products of the photomultiplier tubes department.





Typical cathode-ray tube application in Fairchild-Du Mont Laboratories oscilloscope.



SECTION I

DU MONT CATHODE-RAY TUBES

FAIRCHILD

DU MONT LABORATORIES
DIVISIONS OF FAIRCHILD CAMERA AND INSTRUMENT CORPORATION
ELECTRONIC TUBE DIVISION • TWX 201-471-9665
750 BLOOMFIELD AVENUE • CLIFTON, NEW JERSEY

STANDARD JEDEC PHOSPHORS

Any of the tubes listed on the following pages can be supplied with any of the standard JEDEC registered screen materials. And, in highly specialized applications, Du Mont's experienced chemical laboratory will assist in the formulation of custom-designed screens. As a general guide, the following table of standard screen characteristics is offered.

Designation	Color		Spectral Range Between 10% Points A°
	Fluorescence	Phosphorescence	
P1	Yellowish Green	Yellowish Green	4900 — 5800
P2	Yellowish Green	Yellowish Green	4400 — 6100
P3	Yellowish Orange	Yellowish Orange	5040 — 7000
P4 (all sulfide)	White	White	4100 — 6900
P4 (silicate-sulfide)	White	White	3900 — 7000
P4 (silicate)	White	White	3260 — 7040
P5	Blue	Blue	3500 — 5600
P6	White	White	4160 — 6950
P7	White	Yellowish Green	3900 — 6500
P10	Dark trace: color depends upon absorption characteristics and type of illumination.		4000 — 5500
P11	Blue	Blue	4000 — 5500
P12	Orange	Orange	5450 — 6800
P13	Reddish Orange	Reddish Orange	
P14	Purplish Blue	Yellowish Orange	3900 — 7100
P15	Green	Green	3700 — 6050
P16	Bluish Purple and near UV	Bluish Purple and near UV	3450 — 4450
P17	Yellow White to Blue White	Yellow	3800 — 6400
P18	White	White	3260 — 7040
P19	Orange	Orange	5450 — 6750
P20	Yellow Green	Yellow Green	4850 — 6700
P21	Reddish Orange	Reddish Orange	5540 — 6500
P22	Tri-color		4000 — 7200
P23	White	White	4100 — 7200
P24	Green	Green	4300 — 6300
P25	Orange	Orange	5300 — 7100
P26	Orange	Orange	5450 — 6650
P27	Reddish Orange	Reddish Orange	5820 — 7200
P28	Yellow Green	Yellow Green	4650 — 6350
P29	Two-color phosphor screen composed of a linear array of alternate strips of P2 and P25 phosphors.		
P31	Green	Green	4150 — 6000
P32	Purplish Blue	Yellowish Green	3800 — 6550
P33	Orange	Orange	5450 — 6850
P34	Bluish Green	Yellow Green	3900 — 6800
P35	Blue White	Blue White	4350 — 6480

ACCESSORIES FOR CATHODE-RAY TUBES

Du Mont supplies a line of sockets and connectors designed to meet all requirements of the tubes for which they are intended. In addition to these, Du Mont also offers a line of mu-metal magnetic shields, as well as a variety of deflection yokes and focusing coils. For additional information, write to: Du Mont Electronic Tube Division, 750 Bloomfield Avenue, Clifton, N. J.

ACCESSORY PARTS LIST

JEDEC BASE NUMBER	USE SOCKET DU MONT PART NUMBER
A12-94 A14-93	219-115 (Two piece) OR 219-108 (One piece)
B12-37 B14-38	219-80 [1,2]
B5-57 B6-63 B7-51 B12-43	219-75 [3] (Self supporting type) OR 219-72 (Exposed tabs type)
B11-33 B11-66	219-77
B25-139	219-106 [4]
D8-1	219-73
E9-37	219-76
B8-11 B8-65	219-78
A22-105	219-102

JEDEC CONTACT NUMBER	USE CONNECTOR DU MONT PART NUMBER
C1-2	205-156 (9″ lead)
C1-2	205-253 (15″ lead)
J1-21	214-236 (15″ lead)
J1-22	219-84 (no lead)
J1-25	51005611 (no lead, straight shank
J1-25	219-70 (no lead, bent shank)
Special 1	243-147
Special 2	243-20

[1] Socket Mounting Ring P/N 219-79 recommended

[2] Base Clamp P/N 243-107 recommended

[3] Base Clamp P/N 219-83 recommended

[4] Base Clamp P/N 219-125 recommended

Spectral Peak A°	Persistence	Application	Designation
5250	Medium	Oscillography	**P1**
5430	Medium	Oscillography	**P2**
6020	Medium	No longer in general use	**P3**
Two components, 4600; 5600	Medium short	Television	**P4** (all sulfide)
Two components, 4500; 5400	Medium to medium short	Television	**P4** (silicate-sulfide)
Two components, 4100; 5400	Medium to medium short	Television	**P4** (silicate)
4180	Medium short	Photographic	**P5**
Two components, 4600; 5630	Short	No longer in general use	**P6**
Two components, 4400; 5580	One, medium short; One, long	Radar and oscillography	**P7**
	Very long	Radar	**P10**
4600	Medium short	Oscillographic recording	**P11**
5900	Long	Radar	**P12**
6400	Medium	No longer in general use	**P13**
Two components, 4400; 6010	One, medium short; One, medium	Radar	**P14**
Two components, 3910; 5040	Visible,short; Ultraviolet, very short	Flying spot scanning systems; photographic	**P15**
3820	Very short	Flying spot scanning systems; photographic	**P16**
Two components, 4500; 5540	One, short; One, long	Radar	**P17**
Two components, 4100; 5400	Medium to medium short	Television	**P18**
5950	Long	Radar	**P19**
5600	Medium to medium short	Radar	**P20**
6060	Medium	Radar	**P21**
3 components, 4500; 5260; 6350	Medium short	Color television	**P22**
Two components, 4600; 5750	Medium to medium short	Television	**P23**
5100	Short	Flying spot scanning systems	**P24**
6100	Medium	Radar	**P25**
5950	Very long	Radar	**P26**
6350	Medium	Color television monitor service	**P27**
5500	Long	Radar	**P28**
		Radar	**P29**
5200	Medium short	Oscillography	**P31**
Two components, 4700; 5550	Long	Radar	**P32**
5875	Very long	Radar	**P33**
4900	Very long	Radar and oscillography	**P34**
4860	Medium short	Photographic	**P35**

GENERAL NOTES ON ALL CATHODE-RAY TUBES LISTED:

Cathode-ray tubes are usually designed for a particular set of operating conditions, referred to as "Typical Operating Conditions".

All voltages are given with respect to cathode potential.

Grid cutoff voltage is given for the extinction of the focused undeflected spot, except for the magnetic deflection, electrostatic focus types; for these types, grid cutoff is specified for the extinction of a focused raster pattern. It is negative with respect to cathode potential.

Line width "A" is listed under Typical Operating Conditions. It is measured in accordance with MIL-E-1 specifications at the indicated screen current, or light output for P1 screen, or grid drive.

Heater voltage for all types is 6.3 volts; heater current is 0.600 amp., except as noted.

Most types listed can be supplied with aluminized screens.

NOTES ON ELECTROSTATIC DEFLECTION AND FOCUS CATHODE-RAY TUBES:

It is desirable to bring deflection plate terminal leads out through the neck to keep them as short as possible to minimize capacitance effects, so high frequency signals may be displayed. These neck leads also isolate the accelerator and deflection plate terminals from other gun terminals for high voltage and altitude operation. Tubes with this feature can be identified by the asterisk (*) in the **JEDEC Base Number column.**

The D1 D2 designation refers to the plates nearest the screen, and D3 D4 refers to the plates nearest the gun.

NOTES ON MAGNETIC DEFLECTION, EITHER MAGNETIC OR ELECTROSTATIC FOCUS, CATHODE-RAY TUBES

Although the choice of focusing coils and deflection yokes to be used with magnetic type cathode-ray tubes is a matter of customer preference, the performance and resolution of these tubes depend on the use of the highest quality accessories. Further refinement in resolution near the edge of the screen can be obtained with the use of dynamic focusing.

Focus current is measured using the JEDEC No. 106 focusing coil, unless otherwise specified. The distance from the reference line to the center of the focus coil gap is listed under Typical Operating Conditions. JEDEC Focus Coil No. 127 is used for the Types 5BCP-, and 10ANP-.

	PHYSICAL CHARACTERISTICS					ELECTRICAL CHARACTERISTICS Typical Operating Conditions			
JEDEC Type No.	Outside Face Dimensions (Inches)	Overall Length (Inches)	No. of Guns	Faceplate Curvature Radius (Inches)	JEDEC Base Number	Post Accelerator V DC	Accelerator V DC	Grid No. 2 V DC	Focus Voltage V DC
2AP-A	2	7-7/16	1	8	B11-33		1000		140 to 300
2BP-	2	7-5/8	1	8	B12-43		1000		150 to 280
2FP-	2	7-5/8	1	Flat	B8-218		1000		200 to 350
3ABP-	3	10-3/4	2	Flat	B14-38	4000	2000		380 to 580
3ACP-A	3	10	1	Flat	B12-37	4000	2000		390 to 550
3ADP-	3	10	1	Flat	B12-43*	4000	2000		320 to 470
3AYP-	1-1/2 x 3	8-7/8	1	60	D8-1		2000		400 to 700
3BDP-	1-1/2 x 3	9-1/8	1	60	B12-43		2000		330 to 620
3BFP-	3	13-3/4	1	Flat	B12-43	1500	500		25 to 125
3BP-	3	10	1	8	B12-37		1500		280 to 515
3BQP-	1-1/2 x 3	8-15/16	1	Flat	Encapsulated		1000		200 to 350
3BRP-	3	11-3/4	2	Flat	B25-139	4000	2000		380 to 580
3DP-	3	10-7/16	1	8	B12-37		1500		300 to 515
3GP-	3	11-1/2	1	8	B11-66		1500		245 to 437
3JP-	3	10	1	8	B12-37	3000	1500		300 to 515
3KP-	3	11-1/2	1	8	B11-66		1500		240 to 450
3RP-	3	9-1/8	1	Flat	B12-43		1000		165 to 310
3WP-	3	11-1/2	1	Flat	B12-43		1500		247 to 465
3XP-	1-1/2 x 3	8-7/8	1	15	D8-1		2000		400 to 700
3YP-	1-1/2 x 3	9-1/8	1	15	B12-43		2000		330 to 620
4DP-	3-1/2 x 3-1/2	12-1/4	2	Flat	B12-37*	4000	2000		350 to 550
4FP-	3-1/2 x 3-1/2	12	1	30	B12-37*	4000	2000		335 to 615
4JP-	3-1/2 x 3-1/2	12-1/2	3	30	B25-139	4000	2000		300 to 450
4MP-	3-1/2 x 3-1/2	13-3/4	1	30	B12-43*	4000	2000		340 to 510
4QP-	2-3/4 x 3-1/4	13-1/2	1	Flat	Special* Duodecal	3000	575		40 to 180
5ABP-	5-1/4	16-3/4	1	Flat	B12-37	3000	1500		300 to 515
5ADP-	5-1/4	16-3/4	1	Flat	B12-37	3000	1500		300 to 515
5AFP-	5-1/4	18-1/4	2	Flat	B12-37*	4000	2000		400 to 684
5AGP-	5-1/4	16-3/4	1	Flat	B12-37*	4000	2000		400 to 685
5AMP-	5-1/4	17-5/8	1	Flat	B12-37*		2500		0 to 300
5AQP-	5-1/4	16-3/4	1	Flat	B12-37		2500		0 to 300
5ARP-	5-1/4	18-1/2	2	Flat	B12-37* A12-94		2500		0 to 300
5ATP-	5-1/4	17-5/8	1	Flat	B12-37*		6000	300	0 to 700
5AWP-	5-1/4	16-3/4	1	Flat	B12-37*	10,300	2300		500 to 730
5BDP-	5-1/4	18-1/4	2	Flat	B12-37*	14,000	2000		400 to 630
5BFP-	5-1/4	18-5/16	2	Flat	B12-37*	13,250	2750		600 to 900
5BGP-	5-1/4	17-1/2	1	Flat	B12-37*	10,000	1670		180 to 590
5BHP-	5-1/4	18-1/4	1	Flat	B12-37*	10,000	1670		180 to 590
5BJP-	5-1/4	17-1/2	1	Flat	B25-139	8500	7500		1600 to 2400
5BP/5HP-	5-1/4	16-3/4	1	8	B11-66		1500		255 to 420
5BTP-	5-1/4	12	1	Flat	B12-43	3000	1500		570 to 772
5BWP-	5-1/4	18-1/4	1	Flat	B12-37*	24,000	4000		435 to 1250
5BXP-	2-5/8 x 4-5/8	17-5/8	1	Flat	B12-37*		2500		0 to 300

(See General Notes, Pg. 9 and Special Classifications, Pg. 26)

ELECTRICAL CHARACTERISTICS

Typical Operating Conditions

Negative Grid Cutoff Voltage V DC	Deflection Factor D1 D2 V DC/Inch	Deflection Factor D3 D4 V DC/Inch	Useful Scan (If limited) D1 D2 Inches	Useful Scan (If limited) D3 D4 Inches	Line Width "A" (Inch)	Notes	JEDEC Type No.
30 to 90	195 to 265	167 to 225			0.018 @ 2 Ft. L.	Short	2AP-A
22.5 to 67.5	115 to 155	74 to 100			0.018 @ 4 Ft. L.	Short	2BP-
20 to 35	51 to 69	29 to 39			0.012 @ 10 μA DC	Integral shield	2FP-
45 to 75	164 to 198	148 to 181			0.018 @ 25 μA DC		3ABP-
45 to 75	175 to 205	138 to 158			0.016 @ 50 μA DC		3ACP-A
52 to 87	140 to 160	61 to 70	2.63	1.5	0.014 @ 25 μA DC	High brightness	3ADP-
28.5 to 67.5	68 to 92	28 to 38			0.026 @ 20 Ft. L.	Small size	3AYP-
58 to 135	146 to 198	104 to 140			0.016 @ 5 Ft. L.	Small size	3BDP-
30 to 60	12 to 15	9 to 12			0.030 @ 15 μA DC	High deflection sensitivity	3BFP-
22.5 to 67.5	127 to 173	94 to 128			0.022 @ 5 Ft. L.		3BP-
14.5 to 33.5	34 to 46	14 to 19			0.016 @ 5 Ft. L.	Small size	3BQP-
45 to 75	164 to 198	148 to 181			0.006 @ 20 μA DC	High brightness	3BRP-
22.5 to 67.5	127 to 173	94 to 128			0.024 @ 7.5 Ft. L.	Radial deflection	3DP-
25 to 75	96 to 144	84 to 126			0.014 @ 1.5 Ft. L.		3GP-
22.5 to 67.5	127 to 173	94 to 128			0.030 @ 25 Ft. L.		3JP-
22.5 to 67.5	75 to 102	57 to 78			0.016 @ 4 Ft. L.		3KP-
22.5 to 67.5	73 to 99	52 to 70			0.026 @ 4 Ft. L.		3RP-
45 to 75	62 to 76	43 to 52	2.50	2.25	0.026 @ 7 Ft. L.		3WP-
28.5 to 67.5	68 to 92	28 to 38			0.026 @ 20 Ft. L.	Small size	3XP-
58 to 135	146 to 198	104 to 140				Small size	3YP-
52 to 87	115 to 140	90 to 115			0.020 @ 25 μA DC	High tracking accuracy	4DP-
52 to 87	105 to 145	85 to 115			0.017 @ 25 μA DC		4FP-
45 to 75	100 to 130	42 to 60	2.75	0.80	0.018 @ 25 μA DC		4JP-
52 to 87	68 to 82	42 to 52			0.018 @ 25 μA DC	High brightness	4MP-
30 to 50	25 to 30	12.5 to 15.5			0.030 @ 10 μA DC	High deflection sensitivity and accuracy	4QP-
39 to 65	40 to 54	27 to 36		4.0	0.030 @ 25 μA DC		5ABP-
34 to 56	40 to 50	30.5 to 37.5	4.0	4.0	0.030 @ 25 μA DC		5ADP-
45 to 75	54 to 66	43 to 53	4.0	4.0	0.026 @ 25 μA DC	Low interaction factor	5AFP-
52 to 88	68 to 92	59 to 81			0.022 @ 25 μA DC		5AGP-
34 to 56	40 to 50	20 to 25	4.0	2.5	0.032 @ 15 Ft. L.	High deflection accuracy	5AMP-
34 to 56	40 to 50	31.5 to 38.5	4.0	4.0	0.030 @ 15 Ft. L.	High deflection accuracy	5AQP-
34 to 56	45 to 55	31.5 to 38.5	4.0	3.3	0.030 @ 15 Ft. L.	High deflection accuracy	5ARP-
34 to 56	94 to 116	34 to 42	3.5	1.6	0.035 @ 65 Ft. L.	High deflection accuracy	5ATP-
33 to 55	113 to 128	113 to 128	4.0	4.0	0.016 @ 25 μA DC		5AWP-
45 to 75	130 to 160	111 to 133	3.5	3.5	0.020 @ 50 μA DC		5BDP-
35 to 65	130 to 161	110 to 138	4.0	4.0	0.020 @ 50 μA DC	Integral shield; encapsulated anode	5BFP-
50 to 80	70 to 86	28.4 to 34.8	4.0	2.4	0.028 @ 6 V Drive	Low pattern distortion	5BGP-
50 to 80	70 to 85	15 to 18.3	4.0	1.6	0.025 @ 6 V Drive	Low pattern distortion	5BHP-
105 to 180	215 to 295	210 to 290			0.017 @ 25 μA DC	Minimum deflection defocusing	5BJP-
15 to 45	53 to 72	48 to 66			0.026 @ 2 Ft. L.		5BP/5HP
40 to 94	81 to 109	43 to 58	4.75	4	0.013 @ 25 μA DC		5BTP-
128 to 200	160 to 189	34 to 49	4.0	1.6	0.025 @ 25 μA DC	Encapsulated anode; low pattern distortion	5BWP-
34 to 56	40 to 50	20 to 25	4.13	2.13	0.032 @ 15 Ft. L.	High deflection accuracy	5BXP-

ELECTROSTATIC DEFLECTION AND ELECTROSTATIC FOCUS TUBES

	PHYSICAL CHARACTERISTICS					ELECTRICAL CHARACTERISTICS Typical Operating Conditions			
JEDEC Type No.	Outside Face Dimensions (Inches)	Overall Length (Inches)	No. of Guns	Faceplate Curvature Radius (Inches)	JEDEC Base Number	Post Accelerator V DC	Accelerator V DC	Grid No. 2 V DC	Focus Voltage V DC
5CAP-	5-1/4	17-1/2	1	Flat	B12-37*	6000	1850		225 to 670
5CBP-	5-1/4	18-1/4	1	Flat	B12-37*	4000	1900		190 to 565
5CP-A	5-1/4	16-3/4	1	8	B12-37	3000	1500		280 to 515
5CWP-	5-1/4	20	2	Flat	A14-93* B12-37	8000	3000		0 to 450
5CXP-	5-1/4	14-3/4	1	Flat	B12-43		1500		250 to 475
5DAP-	5-1/4	21-1/4	1	Flat	B12-37*	12,000	1400		180 to 580
5DBP-	5-1/4	19-1/2	1	Flat	B14-38	5000	1400		180 to 580
5DWP-	5-1/4	20-1/4	1	Flat	B14-38*	5000	1400		180 to 580
5DXP-	5-1/4	20-1/4	1	Flat	B14-38*	5000	1400		180 to 580
5JP-	5-5/16	16-3/4	1	10	B11-66*	3000	1500		250 to 467
5LP-	5-5/16	16-3/4	1	10	B11-66	3000	1500		282 to 475
5RP-	5-1/4	16-3/4	1	Flat	B12-37*	10,000	2000		362 to 695
5SP-A	5-1/4	18-1/4	2	Flat	B12-37*	3000	1500		272 to 521
5UP-	5-1/4	14-3/4	1	20	B12-43		1500		260 to 480
5XP-	5-1/4	17-5/8	1	Flat	B12-37*	12,000	2000		362 to 695
5YP-	5-1/4	17-5/8	1	8	B12-37*	4000	2000		362 to 695
6DP-	5-27/32	20-1/16	3	Flat	B25-139	12,000	4000		950 to 1225
7ACP-	4-1/16 x 6-1/16	17-3/4	3	30	B25-139	9000	3000		595 to 1020
7AEP-	7	15-1/2	1	Flat	B12-37	4000	2000		380 to 620
7AGP-	7-1/2	18-7/8	1	30	A22-105		8000		2000 to 2950
7AKP-	6-1/32 x 4-1/32	17-7/8	2	30	B25-139	7300	4000		1150 to 1500
7AMP-	5-1/2 x 5-1/2	17-5/8	2	40	B12-37*	4000	2000		400 to 680
7BAP-	4-1/16 x 6-1/16	18-1/4	2	30	B12-37*	4000	2000		363 to 695
7BDP-	5-1/2 x 5-1/2	20-5/8	5	40	B25-139* A22-105	4000	2000		450 to 650
7BFP-	6-1/16 x 4-1/16	18-3/4	3	30	B25-139	9000	3000		300 to 575
7BGP-	7	18-3/4	1	Flat	B14-38	4000	1000		100 to 300
7BRP-	5-1/2 x 5-1/2	18-5/8	5	40	B25-139*	4000	2000		440 to 755
7BSP-	7-1/8	22-5/8	5	Flat	B25-139*	6000	3000		755 to 1000
7JP-	7	14-1/2	1	20	B12-37		2000		540 to 800
7VP-	7	14-1/2	1	20	B12-37		1500		400 to 600
7YP-	5-1/2 x 5-1/2	18-1/4	5	40	B25-139* A22-105	4000	2000		450 to 650
10ALP-	10-1/2	20	1	42	A22-105		8000		2250 to 3100
12ACP-	12-7/16	24-7/8	2	40	B12-37*		7500		1750 to 2500
12AKP-	12-7/16	23-1/2	1	40	B25-139	8500	7500		1800 to 2650
12AMP-	12-7/16	23-1/8	1	40	B6-63*	9200	5300		1450 to 1750
12AQP-	12-7/16	25-5/8	1	40	B14-38	10,000	5000		1350 to 1650
12ASP-	12-7/16	22-3/4	1	40	B12-37*	9700	6100	300	1750 to 2200
12ATP-	12-7/16	25-5/8	3	40	B25-139*	10,000	5000		1275 to 1725
12AVP-	12-7/16	22-1/2	1	40	B12-37*	9700	6100		1510 to 2225
16AMP-	16-1/8	27-3/4	1	27	B12-37*	12,000	7500		1760 to 2670

ELECTRICAL CHARACTERISTICS

Typical Operating Conditions

Negative Grid Cutoff Voltage V DC	Deflection Factor D1 D2 V DC/Inch	Deflection Factor D3 D4 V DC/Inch	Useful Scan (If limited) D1 D2 Inches	Useful Scan (If limited) D3 D4 Inches	Line Width "A" (Inch)	Notes	JEDEC Type No.
60 to 85	48.3 to 61	22.6 to 28	4.0	3.2	0.030 @ 6 V Drive	Low pattern distortion	5CAP-
62 to 85	48.3 to 58.5	15.5 to 19	4.0	2.4	0.030 @ 6 V Drive	Low pattern distortion	5CBP-
22.5 to 67.5	58 to 80	50 to 60			0.030 @ 15 Ft. L.		5CP-A
45 to 75	65 to 85	45 to 65	4	3	0.010 @ 2 µA DC		5CWP-
22.5 to 67.5	42 to 58	34 to 46.5					5CXP-
40 to 65	48 to 60	12 to 16	4.0	2.0	0.030 @ 25 µA DC	Low pattern distortion	5DAP-
34 to 56	25 to 35	25 to 35			0.022 @ 25 µA DC	Low pattern distortion	5DBP-
34 to 64	25 to 35	25 to 35	4	4	0.030 @ 25 µA DC	Low pattern distortion; beam gating electrodes	5DWP-
34 to 64	30 to 35	13 to 18	4	2.3	0.030 @ 25 µA DC	High deflection sensitivity; beam gating electrodes	5DXP-
34 to 79	58 to 86	58 to 86			0.024 @ 4 Ft. L.		5JP-
22.5 to 67.5	62 to 93	54 to 81			0.024 @ 4 Ft. L.		5LP-
30 to 90	102 to 154	97 to 145			0.030 @ 50 µA DC		5RP-
34 to 56	62 to 76	53 to 65			0.027 @ 10 Ft. L.		5SP-A
22.5 to 67.5	42 to 58	35 to 47			0.025 @ 4 Ft. L.		5UP-
45 to 75	130 to 159	42 to 52	4.25	1.6	0.020 @ 40 Ft. L.		5XP-
30 to 90	72 to 108	24 to 36	4.25	2.5	0.032 @ 25 µA DC		5YP-
75 to 124	112 to 138	105 to 130	4.0	4.0	0.015 @ 25 µA DC	High deflection accuracy	6DP-
67 to 112	86 to 130	84 to 126	3.0		0.036 @ 50 µA DC		7ACP-
45 to 75	81 to 101	67 to 83			0.022 @ 25 µA DC		7AEP-
105 to 175	175 to 195	170 to 186			0.016 @ 25 µA DC	High deflection accuracy	7AGP-
50 to 120	180 to 225	140 to 170			0.012 @ 2 µA DC	Encapsulated anode	7AKP-
45 to 75	63 to 80	48 to 62	4.5	4.5	0.030 @ 25 µA DC	Low trace interaction	7AMP-
45 to 75	84 to 102	67 to 81			0.028 @ 25 µA DC		7BAP-
50 to 90	52 to 68	17 to 23	4.5	1.5	0.026 @ 25 µA DC	High deflection sensitivity	7BDP-
70 to130	53 to 73	40 to 54	(A) & (C) 1.75 (B) 2.25	(A) & (C) 5.25 (B) 5.25	0.026 @ 25 µA DC	Three offset guns (A, B, C)	7BFP-
85 to 130	19 to 26	19 to 26	5	5	0.022 @ 15 µA DC	High deflection sensitivity	7BGP-
30 to 68	63 to 99	59 to 94	4.5	4.5	0.028 @ 25 µA DC	Low interaction factor	7BRP-
42 to 72	71 to 91	77 to 105			0.015 @ 2 µA DC	High deflection accuracy	7BSP-
24 to 56	62 to 82	50 to 68					7JP-
42 max.	47 to 62	38 to 51					7VP-
50 to 90	68 to 84	27 to 37	4.5	1.5	0.026 @ 25 µA DC	Five offset guns	7YP-
155 to 205	155 to 189	151 to 185			0.012 @ 2 µA DC	High deflection accuracy	10ALP-
150 to 225	140 to 190	130 to 180			0.015 @ 2 µA DC	High tracking accuracy	12ACP-
160 to 240	150 to 230	135 to 195			0.017 @ 25 µA DC		12AKP-
11.5	105 to 117	105 to 117			0.020 @ 5 µA DC	Minimum deflection defocusing	12AMP-
10	95 to 105	81 to 90			0.025 @ 25 µA DC	Minimum deflection defocusing	12AQP-
40 to 77	115 to 135	115 to 135			0.020 @ 25 µA DC		12ASP-
64 to 86	(A) & (B) 103 to 127 (C) 103 to 127	(A) & (B) 81 to 99 (C) 67 to 83	(A) & (B) 6.75 (C) 6.75	(A) & (B) 4.31 (C) 2.15	0.013 @ 5 µA DC	Three offset guns (A, B, C)	12ATP-
135 to 202	100 to 150	100 to 150			0.013 @ 2 µA DC	Minimum deflection defocusing	12AVP-
160 to 240	96 to 150	96 to 150			0.020 @ 25 µA DC		16AMP-

ELECTROSTATIC DEFLECTION AND ELECTROSTATIC FOCUS TUBES

	PHYSICAL CHARACTERISTICS					ELECTRICAL CHARACTERISTICS Typical Operating Conditions			
Tube Type	Outside Face Dimensions (Inches)	Overall Length (Inches)	No. of Guns	Faceplate Curvature Radius (Inches)	JEDEC Base Number	Post Accelerator V DC	Accelerator V DC	Grid No. 2 V DC	Focus Voltage V DC
K1038	3	10 - 3/4	2	Flat	B12-37*	3000 to 4000	1500 to 2000		180 to 480
K1058	2	8	1	Flat	B12-43	3000	1500		180 to 360
K1098	5 - 1/4	18 - 5/8	4	Flat	B25-139*	4000	2000		460 to 690
K1115	3 - 1/2 x 3 - 1/2	12 - 1/2	3	30	B25-139	4000	2000		250 to 450
K1119	5 - 1/4	18 - 5/8	4	Flat	A22-105*	4000	2000		362 to 695
K1149	5 - 1/2 x 5 - 1/2	17 - 1/2	1	30	B12-37	4000	2000		430 to 650
K1157	4 - 1/16 x 6 - 1/16	18 - 1/2	2	30	B12-37*	4000	2000		400 to 650
K1188	7 - 1/2 x 10 - 1/4	19 - 3/4	3	40	B25-139*	6000	3000		550 to 960
K1192	1 - 7/16	5 - 7/8	1	Flat	B12-43		500		75 to 140
K1212	5 - 1/4	18 - 1/2	4	Flat	B14-38*	10,000	2500		550 to 900
K1281	4 - 1/16 x 6 - 1/16	13 - 3/4	2	40	B12-37*	4000	2000		450
K1312	5 - 1/4	18 - 1/2	3	Flat	B14-38*	12,000	4000		900 to 1300
K1315	7	21	2	Flat	B12-37*	4000	2000		400 to 650
K1352	2 - 1/4	10	2	Flat	B12-37*	6000	2500		1000
K1355	5 - 1/4	16 - 3/4	1	Flat	B12-37*	10,300	2300		500 to 750
K1362	4 - 1/16 x 6 - 1/16	17 - 7/8	2	30	B25-139	4000	2000		520 to 580
K1508	12 - 7/16	22 - 1/2	1	40	B12-37		4000		1150 to 1500
K1701	12 - 7/16	24 - 1/2	1	40	B12-37*	10,000	5000		1600 to 1650
K1754	15 - 7/8	28	1	56 - 5/16	B12-37*		10,000		3000 to 3500
K1868	12 - 7/16	23 - 1/2	1	40	B12-37*	9500	5500	150	1500 to 1750
K1872	5 - 1/2 x 5 - 1/2	20 - 3/4	5	40	B25-139*	4000	2000		450 to 650
K1990	5 - 1/4	19 - 1/2	2	Flat	B25-139	5000	1400		180 to 580
K1991	15 - 7/8	25	1	56 - 5/16	B12-37*	10,000	3500		810 to 900
K2000	5 - 1/4	17 - 1/2	1	Flat	B12-37*	10,000	1400		200
K2017	5 - 1/4	18 - 1/4	1	Flat	B14-38*	10,000	1575 to 1850	1700	210 to 550
K2023	5 - 1/4	18 - 1/2	2	Flat	B12-37*	8000	4000	1000	1220
K2030	4 - 1/16 x 6 - 1/16	18 - 1/4	3	30	B25-139	9000	3000		720 to 790
K2046	5 - 1/4	17 - 1/2	1	Flat	B14-38*	10,000	1650		120 to 590
K2056	6 - 1/2 x 6 - 1/2	18 - 3/4	1	40	B14-38	8000	3500	97	975
K2076	5 - 1/4	17 - 3/4	1	Flat	B14-38	3000	1000		150 to 250
K2083	5 - 1/4	16 - 3/4	1	Flat	B12-37*	13,250	2750		600 to 900
K2116	3 - 1/2 x 3 - 1/2	9 - 7/8	1	30	B12-37*		1600		200 to 500
K2117	3 - 1/2 x 3 - 1/2	12 - 1/2	3	30	B25-139	4000	2000		250 to 450
K2139	5 - 1/4	17 - 1/4	1	Flat	B12-37*	8000	1000		100 to 590
K2163	5 - 1/2 x 5 - 1/2	18 - 1/2	5	40	B25-139* A22-105	4000	2000		450 to 650
K2171	1 - 1/2 x 3	9	1	Flat	Encapsulated		2500		500 to 875
K2192	3	16 - 1/4	1	Flat	B12-43*	3000	750		40 to 250
K2196	5 - 1/4	19 - 1/2	1	Flat	B12-37*	25,000	7000		2350
K2202	2	11 - 5/8	1	Flat	B12-37*		10,000	500	0 to 350
K2206	12 - 7/16	23 - 1/2	1	40	B12-37*	16,000	9250	83 to 150	2515 to 2685
K2215	5 - 1/4	19 - 1/2	1	Flat	B12-37*	25,000	7000		2295
K2232	15 - 7/8	30	1	56 - 5/16	B12-37*	16,000	8000	101	2300
K2243	5 - 1/4	17 - 5/8	1	Flat	B12-37*	12,000	2000		362 to 695
K2246	5 - 1/4	18 - 1/4	2	Flat	B12-37*	4000	2000		400 to 684
K2252	2 - 1/2	11 - 5/8	1	Flat	B12-37*		10,000	500	0 to 350

ELECTRICAL CHARACTERISTICS

Typical Operating Conditions

Negative Grid Cutoff Voltage V DC	Deflection Factor		Useful Scan (If limited)		Line Width "A" (Inch)	Notes	Tube Type
	D1 D2 V DC/Inch	D3 D4 V DC/Inch	D1 D2 Inches	D3 D4 Inches			
30 to 120	110 to 203	101 to 191					K1038
31 to 59	180 to 220	130 to 160				Short	K1058
80 to 90	74 to 110	63 to 95			0.016 @ 25 μA DC		K1098
45 to 75	100 to 130	42 to 60	2.75	0.80	0.018 @ 25 μA DC	Three offset guns	K1115
30 to 90	72 to 108	28 to 42					K1119
45 to 75	60 to 74	47 to 58			0.014 @ 25 μA DC		K1149
40 to 80	78 to 105	70 to 95			0.028 @ 25 μA DC		K1157
60 to 96	75 to 105	75 to 105	5.2	7.3	0.015 @ 2 μA DC		K1188
15 to 30	80 to 112	75 to 106			0.020 @ 10μA DC	Short	K1192
55 to 95	75 to 135	40 to 75					K1212
52 to 87	120 to 130	80 to 85	2.13	5			K1281
60 to 98	120 to 180	104 to 156	4.25	4.25	0.015 @ 50 μA DC		K1312
45 to 75	48 to 63	40 to 50			0.030 @ 25 μA DC	Low interaction factor	K1315
45 to 75	290 to 350	200 to 250			0.015 @ 25 μA DC	Low pattern distortion	K1352
33 to 55	115 to 136	115 to 136	4	4	0.018 @ 25 μA DC	Minimum deflection defocusing	K1355
43 to 47	86 to 98	73 to 98			0.016 @ 25 μA DC		K1362
69 to 115	65 to 80	54 to 66	7	9	0.020 @ 10 μA DC	High deflection accuracy	K1508
77 to 91	116 to 123	92 to 104			0.010 @ 5 μA DC	Minimum deflection defocusing	K1701
150 to 260	175 to 230	175 to 230			0.015 @ 25 μA DC	Minimum deflection defocusing	K1754
10	95 to 135	87 to 125			0.025 @ 25 μA DC	Minimum deflection defocusing	K1868
50 to 90	58 to 72	20 to 25	4.5	4.5	0.026 @ 25 μA DC	Five offset guns	K1872
34 to 56	25 to 37	25 to 35	4	4	0.026 @ 25 μA DC	Low pattern distortion	K1990
63 to 76	59 to 79	75 to 87			0.016 @ 25 μA DC	Low deflection defocusing	K1991
26	20.5	66.5	4.2	3.0	0.026 @ 25 μA DC	High deflection sensitivity	K2000
50 to 80	68.5 to 81	15 to 19	8	3.2	0.025 @ 6 V Drive	Low pattern distortion	K2017
50	126 to 130	100 to 102			0.0044 @ 2 μA DC	Encapsulated anode	K2023
87 to 110	75 to 84	46 to 56			0.010 @ 2 μA DC	Three offset guns	K2030
50 to 80	68 to 84	22 to 28	4.0	2.4	0.028 @ 6 V Drive	Low pattern distortion	K2046
10	94	91			0.014 @ 25 μA DC	Evaporated phosphor	K2056
40 to 90	16 to 22	13.5 to 18.5			0.030 @ 10 μA DC	High deflection sensitivity	K2076
35 to 65	108 to 132	90 to 110	4	4	0.020 @ 50 μA DC	Encapsulated anode	K2083
49 to 83	60 to 80	62 to 78	2.5	2.5	0.030 @ 3 Ft. L.	Low pattern distortion	K2116
45 to 75	100 to 130	42 to 60	2.75	2.5	0.018 @ 25 μA DC	Encapsulated anode; potted base	K2117
30 to 60	25	5	4.0	1.6	0.038 @ 5 μA DC	Very high deflection sensitivity; encapsulated anode	K2139
50 to 90	68 to 84	27 to 37	4.5	1.5	0.026 @ 25 μA DC	Ruggedized; 300 mA heater; five offset guns	K2163
35 to 85	85 to 115	35 to 48			0.020 @ 3 Ft. L.	Ruggedized; small size	K2171
30 to 60	16 to 25	12 to 18	2.3	2.3	0.030 @ 10 μA DC	High deflection sensitivity; 300 mA heater; beam gating electrodes	K2192
108	248	268			0.015 @ 100 μA DC	300 mA heater; high brightness	K2196
35 to 95	425 to 725	350 to 650			0.0015 @ 5 μA DC		K2202
10	197 to 208	180 to 186			0.022 @ 25 μA DC	Minimum deflection defocusing	K2206
100	250	270			0.008 @ 64 μA DC	High brightness; 300 mA heater	K2215
10	122	136			0.026 @ 25 μA DC		K2232
45 to 75	130 to 159	42 to 52	4.25	1.6	0.010 @ 25 μA DC	Low pattern distortion	K2243
45 to 75	54 to 66	43 to 53	4.0	4.0	0.026 @ 25 μA DC	Tightened glass quality	K2246
35 to 95	580	490	1.9	Full	0.0014 @ 2 μA DC		K2252

Tube Type	PHYSICAL CHARACTERISTICS Outside Face Dimensions (Inches)	Overall Length (Inches)	No. of Guns	Faceplate Curvature Radius (Inches)	JEDEC Base Number	ELECTRICAL CHARACTERISTICS Typical Operating Conditions Post Accelerator V DC	Accelerator V DC	Grid No. 2 V DC	Focus Voltage V DC
K2255	5 - 1/4	20 - 1/4	1	Flat	B14-38*	5000	1400		180 to 580
K2256	5 - 1/4	20 - 1/4	1	Flat	B14-38*	5000	1400		180 to 580
K2257	5 - 1/4	20 - 1/4	1	Flat	B14-38*	5000	1400		180 to 580
K2258	5 - 1/4	20 - 1/4	1	Flat	B14-38*	5000	1400		180 to 580
K2261	12 - 7/16	23 - 1/8	1	40	B6-63*	9200	5300	700	1550 to 1850
K2263	12 - 7/16	23 - 1/2	1	40	B12-37*	16,000	8000	200	2370
K2266	15 - 7/8	27	1	56 - 5/16	B12-37*	16,000	8000	300	2790
KC2302	5 - 1/4	20 - 1/4	2	Flat	B14-38*	5000	1400		180 to 580
KC2303	20 - 1/4	29 - 1/4	2	40	B25-139*		7500		1500 to 2300
KC2308	5 - 1/4	16 - 3/4	1	Flat	B14-38		2500		200 to 600
KC2316	5 - 1/4	20 - 1/4	1	Flat	B14-38*	12,000	1400		180 to 580
KC2317	5 - 1/4	20 - 1/4	1	Flat	B14-38*	12,000	1400		180 to 580
KC2319	5 - 1/4	20 - 1/4	1	Flat	B14-38*	12,000	3000		1000 to 1300
KC2321	5 - 1/4	20 - 1/4	1	Flat	B14-38*	12,000	1400		180 to 580
KC2322	5 - 1/4	18 - 1/4	1	Flat	B12-37*	10,000	1670		180 to 590
KC2323	12 - 7/16	23 - 5/8	1	40	B6-63*	9200	5300	700	1550 to 1850
KC2324	5 - 1/4	19 - 13/16	1	Flat	B12-37*	12,000	2000		220 to 625
KC2339	12 - 1/2	27 - 1/4	1	40	B6-63*	9200	5300	300	1250 to 1850
KC2340	5 - 1/4	16 - 3/4	1	Flat	B14-38		2500		200 to 600
KC2341	5 - 1/4	16 - 3/4	1	Flat	B14-38		2500		200 to 600
KC2343	5 - 1/4	16 - 3/4	1	Flat	B12-37*	10,000	2050		400 to 700
KC2346	3	13 - 3/4	1	Flat	B12-43		1000		175 to 375
KC2350	5 - 1/4	12 - 7/8	1	8	B12-37		2000		400 to 687
KC2371	5 - 1/4	20 - 1/4	1	Flat	B14-38*	5000	1400		180 to 580
KC2382	5 - 1/4	20 - 1/4	1	Flat	B14-38*	14,000	1500		100 to 900
KC2387	10 - 1/2	20 - 5/8	3	4	B12-37*		5500		1400 to 1700
KC2391	4 x 5	16 - 3/4	1	Flat	B14-38*		2500	2500	200 to 800
KC2392	5 - 1/4	20 - 1/4	1	Flat	B14-38*	12,000	1400		180 to 580
KC2395	19	31 - 7/8	1	33	B12-37	18,000	10,000	500	3500 to 4100
KC2412	15 - 3/8 x 12 - 1/4	22 - 1/2	1	27	B12-37*	10,000	5000		1200 to 1770
KC2413	3	23 - 1/8	1	Flat	B14-38*	14,000	1500		100 to 900
KC2419	2	12 - 1/4	1	Flat	B12-37*		10,000	500	0 to +350
KC2420	5 - 1/4	20 - 1/4	1	Flat	B14-38*	12,000	1400		180 to 400
KC2425	3	14 - 1/8	1	Flat	B12-37*	13,000	1600		0 to 500
KC2428	5 - 1/2	18 - 1/2	4	Flat	B14-38 A22-105	8000	2500		550 to 900
KC2437	0.900	3.5	1	Flat	E9-37		800		165 to 215
KC2441	12 - 7/16	23 - 1/2	1	40	B12-37*	16,000	8000	200	2370
KC2442	15 - 3/8 x 12 - 1/4	22 - 1/2	1	27	B12-37*	10,000	5000		1200 to 1770

ELECTRICAL CHARACTERISTICS
Typical Operating Conditions

Negative Grid Cutoff Voltage V DC	Deflection Factor		Useful Scan (If limited)		Line Width "A" (Inch)	Notes	Tube Type
	D1 D2 V DC/Inch	D3 D4 V DC/Inch	D1 D2 Inches	D3 D4 Inches			
34 to 64	25 to 35	25 to 35	4	4	0.030 @ 25 μA DC	Black internal graticule; beam gating electrodes	K2255
34 to 64	25 to 35	25 to 35	4	4	0.030 @ 25 μA DC	White internal graticule; beam gating electrodes	K2256
34 to 64	30 to 35	13 to 18	4	2.4	0.030 @ 25 μA DC	White internal graticule; beam gating electrodes	K2257
34 to 64	30 to 35	13 to 18	4	2.4	0.030 @ 25 μA DC	Black internal graticule; beam gating electrodes	K2258
90 to 175	105 to 117	105 to 117			0.010 @ 2 μA DC		K2261
30	194	174			0.015 @ 25 μA DC	Minimum deflection defocusing	K2263
34	151	163			0.017 @ 25 μA DC	Minimum deflection defocusing	K2266
34 to 64	30 to 35	13 to 18	4	2.3	0.030 @ 25 μA DC	High deflection sensitivity	KC2302
110 to 195	150	150			0.015 @ 25 μA DC	Metal cone; minimum deflection defocusing	KC2303
34 to 60	25 to 35	25 to 35	4.0	4.0	0.022 @ 10 Ft. L.	300 mA heater; beam gating electrodes	KC2308
34 to 64	28 to 38	13 to 19.5	4.0	2.4	0.022 @ 25 μA DC	White internal graticule; anti-glare faceplate; beam gating electrodes	KC2316
34 to 64	28 to 38	13 to 19.5	4.0	2.4	0.022 @ 25 μA DC	Black internal graticule; anti-glare faceplate; beam gating electrodes	KC2317
40 to 110	30 to 45	7.5 to 8.5	4.0	2.4	0.035 @ 25 μA DC	High deflection sensitivity	KC2319
34 to 64	28 to 38	13 to 19.5	4.0	2.4	0.022 @ 25 μA DC	High deflection sensitivity; beam gating electrodes	KC2321
50 to 80	70 to 85	15 to 18.3	4.0	1.6	0.025 @ 6 V Drive	Black internal graticule; low pattern distortion	KC2322
90 to 175	105 to 117	105 to 117			0.010 @ 2 μA DC	Encapsulated anode	KC2323
64 to 100	80 to 94	17 to 25	4	1.6	0.022 @ 25 μA DC	Deflection factor D5D6 100 to 130 V/inch; 4-inch scan; encapsulated anode	KC2324
60 to 120	60 to 100	60 to 100			0.015 @ 2 μA DC	Minimum deflection defocusing	KC2339
34 to 60	25 to 35	25 to 35	4.0	4.0	0.022 @ 10 Ft. L.	300 mA heater; beam gating electrodes; white internal graticule; anti-glare faceplate	KC2340
34 to 60	25 to 35	25 to 35	4.0	4.0	0.022 @ 10 Ft. L.	300 mA heater; black internal graticule; anti-glare faceplate; beam gating electrodes	KC2341
25 to 55	75 to 100	70 to 90	4.0	4.0	0.025 @ 50 μA DC	Ruggedized; encapsulated anode	KC2343
25 to 75	23 to 29	21 to 27			0.020 @ 25 μA DC	300 mA heater; low voltage applications	KC2346
30 to 90	125 to 180	100 to 145			0.015 @ 25 μA DC	Radial deflection	KC2350
34 to 64	30 to 35	13 to 18	4.0	2.4	0.030 @ 25 μA DC	300 mA heater; white internal graticule; beam gating electrodes; anti-glare faceplate	KC2371
34 to 74	50 to 70	24 to 38	2.0	1.6	0.010 @ 15 μA DC	For photographing high-speed transients; beam gating electrodes	KC2382
100 to 175	(A) (B) & (C) 80 to 115	(A) & (C) 70 to 90 (B) 80 to 105	(A) (B) & (C) 8.0	(A) & (C) 3.0 (B) 7.0	0.016 @ 50 Ft. L. (P31)	Three offset guns (A, B, & C)	KC2387
34 to 70	32 to 40	25 to 30	4.0	2.8	0.020 @ 10 Ft. L.	300 mA heater; high deflection accuracy	KC2391
34 to 64	28 to 38	13 to 19.5	4.0	3.15	0.022 @ 25 μA DC	High deflection sensitivity; beam gating electrodes	KC2392
145 to 215	100 to 160	110 to 170	17 - 3/4	17 - 3/4	0.013 @ 25 μA DC	Large display	KC2395
105 to 160	80 to 120	80 to 120	11	8	0.020 @ 25 μA DC	Uniform spot size	KC2412
34 to 80	40 to 70	14 to 25			0.010 @ 15 μA DC	Fiber optic face; beam gating electrodes	KC2413
35 to 95	525 to 625	425 to 525			0.002 @ 5 μA DC	Additional deflection plates, D5D6; 350 to 450 v/inch; 0.2-inch scan	KC2419
34 to 74	28 to 38	13 to 19.5	4	2.4	0.022 @ 25 μA DC	Beam gating electrodes	KC2420
30 to 75	30 to 40	5.5 to 7.5	2.4	2	0.022 @ 15 μA DC	High deflection sensitivity	KC2425
55 to 100	30 to 50	50 to 70	3.5	0.84	0.012 @ 2 μA DC	Four offset guns	KC2428
45 to 60	113.3 to 116.7	113.3 to 116.7	0.800	0.800	0.008 @ 15 Ft. L. (P11)	Miniature tube with high deflection sensitivity and high light output	KC2437
30	194	174			0.015 @ 25 μA DC	Bonded safety panel; high brightness; high writing speed	KC2441
105 to 160	80 to 120	80 to 120	11	8	0.020 @ 25 μA DC	Uniform spot size; black internal graticule; bonded safety panel	KC2442

MAGNETIC DEFLECTION AND MAGNETIC FOCUS TUBES

	PHYSICAL CHARACTERISTICS						
JEDEC Type No.	Outside Face Dimensions (Inches)	Overall Length (Inches)	Neck O.D. (Inches)	Radius of Face Curvature (Inches)	JEDEC Base Number	Deflection Angle (Degrees)	Accelerator V DC
4CP-	4	11-1/4	1-7/16	Flat	B5-57	50	20,000
5BCP-	4.95	7	.870	24	B8-11	70	8000
5CKP-	5-1/4	16-5/8	1-7/16	24	B8-11	42	20,000
5DKP-	4-15/16	11-1/8	1-3/8	24	B8-11	53	8000
5FP-(7A, 14)	4-15/16	11-1/8	1-3/8	24	E9-37	53	4000
5FP-(15 B)	4-15/16	11-1/8	1-3/8	Flat	B7-51	53	5000
5FP-A(14A)	4-15/16	11-1/8	1-3/8	24	B8-11	53	4000
7AJP-	5-1/2 x 5-1/2	19	1-7/16	24	B8-65	40	14,000
7BCP-	7-1/2	18-3/8	1-7/16	24	B8-65	45	37,000
7BP-A	7	13-1/4	1-3/8	24	B5-57	53	7000
7BP-B	7	13-1/4	1-3/8	24	B5-57	53	7000
7MP-	7-3/16	12-3/4	1-7/16	24	B8-65	50	7000
7SP-	7-3/16	14-1/16	1-7/16	40	B6-63	50	20,000
7UP-	7	13-1/4	1-3/8	30	B7-51	53	7000
10AKP-	10-1/2	17-3/4	1-7/16	42	B7-51	50	9000
10ANP-	10-1/2	16	.870	42	B5-57	50	9000
10KP-	10-1/2	17-5/8	1-7/16	42	B5-57	50	9000
10KP-A	10-1/2	17-5/8	1-7/16	42	B5-57	50	9000
10QP-	10-1/2	17-5/8	1-7/16	42	E9-37	50	20,000
12DP-A	12	19-5/8	1-3/8	20	B8-65	50	7000
12DP-C	12	19-5/8	1-3/8	20	B8-65	50	4000
12SP-D	12-7/16	18-3/4	1-7/16	40	B5-57	54	9000
16ADP-	15-7/8	21-5/8	1-7/16	40	B7-51	53	12,000
17QCP-	12-1/4 x 15-3/8	19-1/4	1-7/16	27	B5-57	70	5000
22CP-	21-3/4	22-1/16	1-7/16	165	B5-57	70	15,000
K1828	3	14-9/16	1-7/16	Flat	B7-51	42	20,000
K1849	3-1/4	16-5/8	1-7/16	Flat	B7-51	25	20,000
K1871	5-1/4	16-5/8	1-7/16	Flat	B7-51	42	20,000
K1921	10-1/2	12-3/8	.840	42	E9-37	70	9000
K1972	3	14-9/16	1-7/16	Flat	B7-51	42	20,000
K1993	5-1/4	16-5/8	1-7/16	Flat	B7-51	42	20,000
K2005	15-7/8	29	1-7/16	40	B7-51	70	27,000
K2054	15-7/8	21-3/4	1-7/16	56-5/16	B5-57	60	25,000
K2152	18-5/8	21-7/8	1-7/16	28	B6-63	66	16,000
K2160	1-7/16	13-1/2	1-7/16	Flat	B7-51	35	10,000
K2161	5-1/4	16-5/8	1-7/16	Flat	B7-51	42	20,000
K2162	7	18	1-7/16	Flat	B7-51	50	28,000
K2176	7-1/2	22-3/8	1-7/16	30	B7-51		15,000

ELECTRICAL CHARACTERISTICS
Typical Operating Conditions

Grid No. 2 V DC	Focus Current mA DC	Focus Coil Gap Spacing (Inches)	Negative Grid Cutoff Voltage V DC	Line Width "A" @ 200 µA DC (Inch)	Notes	JEDEC Type No.
	166 to 225	3.25	63 to 147	0.010 @ 300 µA DC	Integral corona shield; high brightness	4CP-
	56 to 84	2.38	25 to 75	0.011	300 mA heater	5BCP-
1000	135	3.5	35 to 110	0.001 @ 25 µA DC	Encapsulated anode	5CKP-
250	116 to 156	2.75	30 to 70	0.0065		5DKP-
250	75 to 102	2.75	25 to 70	0.020		5FP-(7A, 14)
250	91 to 123	2.75	25 to 70	0.0064		5FP-(15 B)
250	75 to 102	2.75	25 to 70	0.010		5FP-A(14A)
550	89 to 140	3.75	75 to 150	0.008		7AJP-
350	735 AT	2.75	40 to 87	0.006 @ 400 µA DC		7BCP-
250	99 to 135	2.75	25 to 70	0.020		7BP-A
250	99 to 135	2.75	25 to 70	0.011		7BP-B
250	105 to 140	2.75	27 to 63	0.012		7MP-
	166 to 225	3.25	63 to 147	0.009 @ 100 µA DC	High brightness	7SP-
250	99 to 135	2.75	25 to 70	0.020	Aluminized	7UP-
650	100 to 127	3.25	40 to 70	0.012		10AKP-
250	40 to 60	2.5	20 to 45	0.013 @ 100 µA DC	300 mA heater	10ANP-
250	100 to 127	3.25	27 to 63	0.020		10KP-
250	100 to 127	3.25	27 to 63	0.015		10KP-A
	166 to 225	3.25	63 to 147	0.013 @ 100 µA DC	High brightness	10QP-
250	99 to 135	4.125	25 to 70	0.040		12DP-A
250	75 to 102	4.125	25 to 70	0.020		12DP-C
250	100 to 122	3.25	27 to 63	0.015		12SP-D
250	81 to 109	3.25	27 to 63	0.020		16ADP-
300	85	3.0	28 to 72	0.025 @ 100 µA DC	External conductive coating; cylindrical faceplate	17QCP-
300	600 to 700 AT	3.25	33 to 77	0.050	Almost flat face; metal cone	22CP-
1000	144	3.5	35 to 110	0.001 @ 25 µA DC	Encapsulated anode	K1828
1000	135	3.5	35 to 110	0.001 @ 25 µA DC	Encapsulated anode	K1849
1000	135	3.5	35 to 110	0.0007 @ 10 µA DC	Encapsulated anode	K1871
50	54	3.0	15	0.009 @ 100 µA DC	300 mA heater	K1921
1000	144	3.5	35 to 110	0.0007 @ 10 µA DC	Encapsulated anode	K1972
300	160	3.5	30 to 70	0.003		K1993
300	25	6Δ	15 to 45	0.006 @ 90 µA DC	Deflection factor: D1 D2 — 45 to 61 V/Inch/KV D3 D4 — 47 to 63 V/Inch/KV Metal cone	K2005
500	170	2.75	55	0.003 @ 100 µA DC	High brightness	K2054
300	135	3	38	0.010 @ 15 V Drive	Metal cone	K2152
1000	110	4.5	35 to 110	0.001 @ 10 µA DC		K2160
1000	144	3.5	110	0.0007 @ 10 µA DC	Encapsulated anode	K2161
1000	155	3.5	35 to 110	0.0023 @ 150 µA DC	High brightness; encapsulated anode	K2162
1000	100	3.0	68	0.0016 @ 200 Ft. L	Deflection factor: D1D2 — 1215 V/Inch D3D4 — 1145 V/Inch	K2176

	PHYSICAL CHARACTERISTICS						
Tube Type	Outside Face Dimensions (Inches)	Overall Length (Inches)	Neck O.D. (Inches)	Radius of Face Curvature (Inches)	JEDEC Base Number	Deflection Angle (Degrees)	Accelerator V DC
K2181	4 - 15/16	11 - 1/8	1 - 3/8	24	B8-11	53	15,000
K2226	3	15 - 1/16	1 - 7/16	Flat	B7-51	40	10,000
K2230	5 - 1/4	23 - 3/8	1 - 7/16	Flat	B7-51	42	30,000
K2236	10 x 3 - 1/2	19 - 15/16	1 - 7/16	Flat	B7-51	55	10,000
K2270	3	15 - 1/16	1 - 7/16	Flat	B7-51	40	10,000
KC2297	15 - 7/8	23 - 1/4	1 - 7/16	40	B7-51	53	16,000
KC2304	5 - 1/4	17 - 3/4	1 - 7/16	Flat	B7-51	42	30,000
KC2307	5 - 1/4	16 - 5/8	1 - 7/16	Flat	Encapsulated	42	20,000
KC2312	7 - 1/2	18 - 3/8	1 - 7/16	30	B7-51	45	27,000
KC2327	5 - 1/4	16 - 5/8	1 - 7/16	Flat	B7-51	42	20,000
KC2347	5 - 1/4	16 - 5/8	1 - 7/16	Flat	B7-51	42	20,000
KC2354	5 - 1/4	16 - 5/8	1 - 7/16	Flat	B7-51	42	20,000
KC2366	3 - 1/2 x 10	19 - 15/16	1 - 7/16	30	B7-51	55	20,000
KC2373	10 - 1/2	21 - 5/8	1 - 7/16	42	B5-57	50	25,000
KC2380	5 - 1/4	16 - 5/8	1 - 7/16	Flat	B7-51	42	20,000
KC2411	5 - 1/4	16 - 5/8	1 - 7/16	Flat	B7-51	42	20,000
KC2414	5 - 1/4	16 - 5/8	1 - 7/16	Flat	B7-51	42	20,000
KC2415	3	7 - 11/16	0.840	Flat	E9-37	70	20,000
KC2426	5 - 1/4	23 - 3/8	1 - 7/16	Flat	B7-51	42	20,000

Δ Celco D1315-1 focus coil

HIGH RESOLUTION AND FIBER OPTICS

The Fairchild-Du Mont line of Cathode Ray Tubes includes a large variety of high resolution and fiber optic types.

Du Mont's high resolution tubes are capable of providing displays with extremely small spot sizes. Specially designed electron guns are used in conjunction with very fine grain screens to achieve this resolution. Superior quality faceplates are used, with tight manufacturing control to eliminate blemishes. A special screen is available which reduces the possibility of screen burning under severe operating conditions. In addition, all types can be supplied with a low noise screen for critical applications. Typical applications include presentation of precision radar displays; operation in flying spot scanning systems; and operation with photographic recording systems.

Du Mont fiber optic types enable more efficient coupling to optical transducers. Images produced by the electron beam appear directly on the front of the fiber optic faceplate, making it possible to expose film placed in direct contact with it. This eliminates the need for auxiliary optical systems with consequent loss in light output.

Light diffusion, parallax error, and reflections because of glass thickness are effectively eliminated. Light output is increased, with much more accurate presentation of the information supplied to the cathode ray tube. The transmission efficiency of entire systems is improved when using Du Mont fiber optic tubes.

(See General Notes, Pg. 9 and Special Classifications, Pg. 26)

ELECTRICAL CHARACTERISTICS

Typical Operating Conditions

Grid No. 2 V DC	Focus Current mA DC	Focus Coil Gap Spacing (Inches)	Negative Grid Cutoff Voltage V DC	Line Width "A" @ 200 μA DC (Inch)	Notes	Tube Type
250	182	2.75	51	0.0056 @ 100 μA DC		K2181
1000	110	6	35 to 110	0.001 @ 10 μA DC		K2226
1000	26	6.75∆	60	0.0025 @ 120 μA DC	Defl. factors: D1D2 — 91 V/inch/KV; D3D4 — 101 V/inch/KV; projection tube	K2230
1000	110	4.5	35 to 110	0.0015 @ 10 μA DC	Line scan, flat fiber optic insert	K2236
500	110	6	35 to 110	0.0007 @ 5 μA DC		K2270
500	130	3.25	41	0.007 @ 25 μA DC	Metal cone	KC2297
1000	155	3.5	69	0.0008 @ 25 μA DC	Encapsulated anode	KC2304
1000	135	3.5	35 to 110	0.001 @ 25 μA DC	Encapsulated	KC2307
1000	150	2.75	35 to 110	0.004 @ 100 μA DC		KC2312
1000	135	3.5	35 to 110	0.0008 @ 10 μA DC	Encapsulated anode; burn-resistant screen	KC2327
1000	135	3.5	35 to 110	0.0007 @ 10 μA DC	Minimum face charging; encapsulated anode	KC2347
1000	135	3.5	35 to 110	0.001 @ 25 μA DC	Encapsulated anode	KC2354
1000	110	3.5	35 to 110	0.0025 @ 10 μA DC	Line scan; 1.2-inch radius fiber optic insert	KC2366
1000	130	3.5	45	0.002 @ 10 μA DC		KC2373
1000	135	3.5	35 to 110	0.0008 @ 10 μA DC	Encapsulated anode; Burn-resistant screen; uniform spot size	KC2380
1000	135	3.5	35 to 110	0.0007 @ 10 μA DC	Nesa coated (externally); encapsulated anode; burn resistant screen	KC2411
1000	135	3.5	35 to 110	0.001 @ 10 μA DC	High resolution; burn resistant screen; encapsulated anode	KC2414
300	85	2.38 (#127 coil)	15 to 45	0.005 @ 1000 Ft. L. (P31)	Space-saver; high brightness 300 mA heater	KC2415
1000	115	6.75	35 to 110	0.0015 @ 10 μA DC	High resolution; for photographic recording of Alpha-numeric information D1D2 and D3D4 deflection factors, 1000 v/inch	KC2426

High resolution guns are an additional feature of Du Mont fiber optic tubes. Displays with small spot size and high brightness are achieved, while diffusion and halation are reduced.

Typical applications include photographic printing by direct contact; coupling to fiber optical systems, or electronic devices using fiber optic input; high speed recording of computer output data.

A listing of both the high resolution and fiber optic types is to be found on page 26; characteristics of each tube are included in the data charts. Tubes are listed in numerical order under their specific classifications.

MAGNETIC DEFLECTION AND ELECTROSTATIC FOCUS TUBES

	PHYSICAL CHARACTERISTICS						
JEDEC Type No.	Outside Face Dimensions (Inches)	Overall Length (Inches)	Neck O.D. (Inches)	Radius of Face Curvature (Inches)	JEDEC Base Number	Deflection Angle (Degrees)	Accelerator V DC
3AGP-	3	5-3/8	.870	Flat	E9-37	70	7000
3AKP-	3	6-3/8	.870	Flat	Encapsulated	35●	7000
5AHP-	4-15/16	11-1/8	1-3/8	24	B8-11	53	5000
5AUP-	5	12-1/2	1-7/16	Flat	B7-51	40	20,000
5BRP-	5	6-9/16	.870	24	E9-37	70	8000
5CEP-	5-1/4	13	1-7/16	Flat	B6-63	42	20,000
5EAP-	4-15/16	9-5/8	.870	24	E9-37	30●	8000
5EBP-	4-15/16	8-5/8	.870	24	E9-37	35●	8000
5ZP-	5	14-3/8	1-7/16	Flat	B7-51	40	27,000
7ABP-	7-3/16	13-1/4	1-7/16	24	B6-63	50	7000
7AQP-	7	8-1/16	.870	24	E9-37	70	10,000
7TP-	7-3/16	13-1/8	1-7/16	24	B6-63	50	10,000
8HP-	6-1/16 x 7-7/8	9-15/16	1-7/16	27	B6-63	90	11,000
8MP-	6-1/16 x 7-7/8	9-15/16	1-7/16	27	B6-63	90	15,000
10SP-	10-1/2	16-5/8	1-7/16	42	B6-63	50	12,000
10UP-	10-1/2	17-5/8	1-7/16	42	B6-63	50	10,000
10WP-	10-1/2	16-15/16	1-7/16	42	B6-63	50	10,000
12ABP-	12-7/16	18	1-7/8	40	B6-63	55	10,000
12AWP-	12-7/16	12-1/4	.870	40	E9-37	70	10,000
16AGP-	15-7/8	21-1/2	1-7/16	40	B7-51	53	12,000
16AKP-	15-7/8	22-1/16	1-7/16	56-5/16	B7-51	53	12,000
19WP-	18-5/8	24-11/16	1-7/16	28	B7-51	66	10,000
B1191	10-1/2	10-9/16	.840	42	E9-37	70	10,000
K1285	10-1/2	17-5/8	1-7/16	42	B7-51	50	10,000
K1635	2-3/4 x 4-3/4	8-7/16	.840	24	Encapsulated	56	4000
K1709	15-7/8	22-5/16	1-7/16	60	B7-51	60	12,000
K1726	5-1/4	13	1-7/16	Flat	B7-51	42	20,000
K1737	7	8-3/8	.840	24	E9-37	70	8000
K1887	3	5-3/8	.840	Flat	E9-37	70	7000
K1898	4.95	6-9/16	.840	24	E9-37	70	8000
K1899	3	7	.870	Flat	E9-37	70	15,000
K1963	3-7/16	5-13/16	1-7/32	Flat	Encapsulated	70	8000
K1970	3	10-15/16	1-7/16	Flat	B7-51	42	20,000
K1971	7-1/2	15-3/4	1-7/16	30	B6-63	45	20,000
K1987	7	8-1/16	.840	24	E9-37	70	10,000
K1988	10-1/2	10-9/16	.840	42	E9-37	70	10,000
K1989	12-7/16	12-1/4	.840	40	E9-37	70	10,000
K1994	3	7	.870	Flat	E9-37	70	10,000
K2064	21-3/4	24	1-7/16	165	B7-51	70	18,000
K2078	5	13-1/4	1-7/16	Flat	B7-51	50	10,000
K2099	15-7/8	24	1-7/16	56-5/16	B6-63	53	15,000
K2101	3	13	1-7/16	Flat	B7-51	40	10,000
K2102	7-3/16	13-7/16	1-7/16	24	B6-63	50	10,000

■ Cathode voltage, positive with respect to Grid No. 1 ● Half angle

(See General Notes, Pg. 9 and Special Classifications, Pg. 26)

ELECTRICAL CHARACTERISTICS

Typical Operating Conditions

Grid No. 2 V DC	Focus Voltage V DC	Negative Grid Cutoff Voltage V DC	Line Width "A" (Inch)	Notes	JEDEC Type No.
300	—40 to +325	15 to 45	0.012 @ 100 μA DC	300 mA heater	3AGP-
300	—105 to +250	45 to 95	0.011 @ 50 μA DC	Sector scan; 300 mA heater; encapsulated anode	3AKP-
300	0 to 200	28 to 72	0.010 @ 100 μA DC		5AHP-
200	3400 to 4300	40 to 100	0.004 @ 10 μA DC	Optical quality faceplate	5AUP-
300	—50 to +350	15 to 45	0.014 @ 100 μA DC	300 mA heater	5BRP-
300	4140 to 4740	40 to 65	0.0015 @ 10 μA DC	Encapsulated anode	5CEP-
250	0 to 250	■10 to 20	0.014 @ 100 μA DC	Sector scan; 300 mA heater	5EAP-
250	—105 to +250	■40 to 85	0.014 @ 100 μA DC	Sector scan; 300 mA heater	5EBP-
200	6300 ± 12%	42 to 98	0.010 @ 50 μA DC		5ZP-
300	0 to 250	28 to 72	0.012 @ 100 μA DC		7ABP-
300	—50 to +350	15 to 45	0.015 @ 100 μA DC	300 mA heater	7AQP-
200	1040 to 1400	22 to 52		Monitor	7TP-
300	0 to 300	28 to 72	600 lines @ 100 μA DC	Monitor	8HP-
300	0 to 450	28 to 72	600 lines @ 100 μA DC	Monitor	8MP-
200	1400 to 1900	18 to 48	0.017 @ 100 μA DC	Monitor	10SP-
300	—150 to +150	28 to 72	0.015 @ 100 μA DC	Minimum astigmatism	10UP-
300	0 to 300	28 to 72	0.017 @ 100 μA DC		10WP-
300	0 to 300	28 to 72	0.019 @ 100 μA DC		12ABP-
300	0 to 450	15 to 45	0.018 @ 25 μA DC	300 mA heater	12AWP-
300	—135 to +400	35 to 75	0.018 @ 100 μA DC	Metal cone	16AGP-
300	—300 to +250	35 to 75	0.030 @ 100 μA DC		16AKP-
300	3400 to 4600	35 to 72	0.024 @ 2 μA DC	Metal cone; deflection factor, 190 V/inch	19WP-
					Tube Type
300	0 to 350	15 to 45	0.012 @ 100 μA DC	300 mA heater	B1191
300	—150 to +300	33 to 77	0.013 @ 25 μA DC	Rear window read out	K1285
300	0 to 120	15 to 45	0.006 @ 10 μA DC	300 mA heater; encapsulated anode	K1635
400	3000 to 4000	35 to 70	0.012 @ 25 μA DC	Defl. factors: D1D2 315 to 385 V/inch D3D4 330 to 410 V/inch	K1709
300	4140 to 4740	35 to 70	0.001 @ 10 μA DC	Encapsulated anode	K1726
300	0 to 300	10 to 20	0.006 @ 100 μA DC	300 mA heater; encapsulated anode	K1737
300	0 to 325	12 to 20	0.012 @ 75 μA DC	300 mA heater	K1887
300	0 to 350	12 to 20	0.014 @ 75 μA DC	300 mA heater	K1898
300	100 to 340	13 to 24	0.005 @ 25 μA DC	300 mA heater	K1899
300	135 to 248	14 to 18	0.0027 @ 10 Ft. L.	300 mA heater; encapsulated anode	K1963
1000	3400 to 4000	35 to 110	0.0008 @ 10 μA DC	Encapsulated anode	K1970
300	4500 to 5100	40 to 65	0.0015 @ 10 μA DC		K1971
300	0 to 350	12 to 20	0.015 @ 75 μA DC	300 mA heater	K1987
300	0 to 350	12 to 20	0.018 @ 75 μA DC	300 mA heater	K1988
300	0 to 350	12 to 20	0.020 @ 75 μA DC	300 mA heater	K1989
300	95 to 300	16 to 28	0.0025 @ 5 μA DC	300 mA heater; encapsulated anode	K1994
300	210	51	0.011 @ 200 μA DC	Almost flat face; metal cone; high brightness	K2064
300	0 to 300	30 to 70	0.001 @ 10 μA DC		K2078
275	300	72	0.011 @ 250 μA DC		K2099
300	0 to 300	30 to 70	0.001 @ 10 μA DC	Deflection factor 1676 V/inch	K2101
300	45	135	0.007 @ 200 μA DC		K2102

MAGNETIC DEFLECTION AND ELECTROSTATIC FOCUS TUBES

	PHYSICAL CHARACTERISTICS						
Tube Type	Outside Face Dimensions (Inches)	Overall Length (Inches)	Neck O.D. (Inches)	Radius of Face Curvature (Inches)	JEDEC Base Number	Deflection Angle (Degrees)	Accelerator V DC
K2107	12-7/16	18	1-7/16	40	B6-63	55	10,000
K2111	5-1/4	13	1-7/16	Flat	B6-63	42	20,000
K2115	12-7/16	18-1/2	1-7/16	40	B6-63	55	12,000
K2121	12-7/16	20-1/2	1-7/16	40	B6-63	55	12,000
K2143	20-1/4 x 15-9/16	21-1/2	1-7/16	35	B6-63	65	16,000
K2155	1-7/16	11	1-7/16	Flat	B7-51	35	10,000
K2159	1-7/16	12	1-7/16	Flat	B7-51	35	10,000
K2166	7-7/8 x 6-1/16	11-7/8	1-7/16	27	B6-63	90	16,000
K2195	2-3/4 x 4-3/4	7-1/2	.870	24	E9-37	56	10,000
K2198	20-1/4 x 15-9/16	23-3/8	1-7/16	35	B6-63	66	16,000
K2207	7-3/16	13-1/4	1-7/16	24	B6-63	50	7000
K2208	4	12-7/8	1-7/16	Flat	B7-51	40	10,000
K2222	5-1/4	18-1/8	1-7/16	Flat	B7-51	26	20,000
K2237	3-1/2 x 3-1/2	7-1/2	.870	30	E9-37	73.5	7500
K2267	18-5/8	22-9/16	1-7/16	28	B6-63	66	10,000
K2268	1-7/16	10	1-7/16	Flat	B6-63	35	10,000
K2269	3	12-3/4	1-7/16	Flat	B6-63	40	10,000
K2272	7	8-3/8	.840	24	E9-37	70	10,000
K2281	3-15/16	7.45	.870	Flat	E9-37	52	7000
K2282	4-15/16 x 4-1/16	8-3/4	.870	40	E9-37	55	9500
KC2287	3-3/16	12-1/2	1-7/16	Flat	Encapsulated	40	10,000
KC2288	3	8-3/4	1-7/16	Flat	B7-51	42	25,000
KC2301	2	5-3/4	.870	Flat	E9-37	50	10,000
KC2310	6-1/16 x 7-7/8	9-15/16	1-7/16	27	B6-63	90	15,000
KC2333	18-5/8	21-7/8	1-7/16	28	B6-63	66	15,000
KC2349	1-7/16	11	1-7/16	Flat	B7-51	35	10,000
KC2355	4	13-1/2	1-7/16	Flat	B12-43	50	20,000
KC2378	3-1/2 x 10	14-5/8	1-7/16	30	B7-51	55	10,000
KC2396	10-1/2	19-13/16	1-7/16	42	B6-63	50	10,000
KC2398	18-17/32	24-11/16	1-7/16	28	B7-51	66	12,000
KC2399	5-1/4	13	1-7/16	Flat	B6-63	42	10,000
KC2407	4	12-7/8	1-7/16	Flat	B7-51	40	10,000
KC2408	3	8-3/4	1-7/16	Flat	B7-51	42	25,000
KC2417	15-7/8	22-5/16	1-7/16	60	B7-51	60	12,000
KC2421	15-3/8 x 12-1/4	19-3/16	1-7/16	27	B6-63	65	14,000
KC2439	3	5-3/8	0.840	Flat	E9-37	70	15,000

(See General Notes, Pg. 9 and Special Classifications, Pg. 26)

ELECTRICAL CHARACTERISTICS
Typical Operating Conditions

Grid No. 2 V DC	Focus Voltage V DC	Negative Grid Cutoff Voltage V DC	Line Width "A" (Inch)	Notes	Tube Type
300	0 to 300	28 to 72	0.010 @ 100 µA DC	Minimum spot blooming	K2107
300	4600	43	0.0009 @ 2 µA DC	Encapsulated anode	K2111
400	3325	52	0.007 @ 10 µA DC		K2115
400	3350	47 to 51	0.010 @ 25 µA DC	Deflection factor, D1D2 308 V/inch D3D4 286 V/inch	K2121
300	250	54	0.018 @ 100 µA DC	Monitor	K2143
500	−100 to +500	35 to 110	0.0015 @ 5 µA DC		K2155
500	−100 to +500	35 to 110	0.0015 @ 5 µA DC	Deflection factor 1500 to 2000 V/inch	K2159
300	168 to 390	45	0.007 @ 50 µA DC	Deflection factor 505 V/inch	K2166
300	0 to 350	12 to 20	0.015 @ 75 µA DC	300 mA heater	K2195
300	340	65	0.018 @ 100 µA DC	Monitor	K2198
300	0 to 250	10 to 25	0.0075 @ 100 µA DC		K2207
300	0 to 300	30 to 70	0.001 @ 10 µA DC	Encapsulated anode	K2208
300	4750 to 6450	40 to 65	0.002 @ 10 µA DC	Encapsulated anode	K2222
300	0 to 300	30 to 60	0.003 @ 25 µA DC	Encapsulated anode	K2237
300	190 to 300	51 to 59	0.018 @ 25 µA DC	Metal cone	K2267
500	1550 to 1850	35 to 110	0.0007 @ 5 µA DC		K2268
500	2070 to 2370	35 to 110	0.0007 @ 5 µA DC		K2269
300	−50 to +350	15 to 45	0.015 @ 100 µA DC	300 mA heater; encapsulated anode	K2272
300	0 to 300	20 to 40	0.020 @ 50 µA DC	300 mA heater	K2281
300	0 to 300	15 to 45	0.010 @ 10 µA DC	300 mA heater	K2282
500	2000 to 3100	30 to 100	0.0007 @ 2 µA DC	Encapsulated anode	KC2287
300	2970	59 to 64	0.005 @ 100 µA DC	Projection tube	KC2288
300	0 to 350	10 to 25	0.002 @ 10 µA DC	300 mA heater	KC2301
300	0 to 450	28 to 72	0.005 @ 100 µA DC	Encapsulated anode; Monitor	KC2310
300	−100 to +300	28 to 72	0.025 @ 100 µA DC	Metal cone	KC2333
500	228	48	0.001 @ 5 µA DC		KC2349
300	5000	59	0.0009 @ 10 µA DC	Deflection sensitivity 0.003 inch/V; encapsulated anode	KC2355
500	1500 to 2000	25 to 85	0.008 @ 10 µA DC	Line scan; flat fiber optic insert	KC2378
300	−150 to −300	40 to 77	0.011 @ 100 µA DC	Minimized deflection and modulation defocusing	KC2396
300	100 to 450	30 to 60	0.020 @ 10 µA DC	Metal cone; Alpha-Numeric Readout; D1D2 and D3D4 Deflection factors, 180 to 230 v/inch	KC2398
250	2070 to 2370	40 to 70	0.0015 @ 1 µA DC	Ruggedized; high resolution; encapsulated anode	KC2399
300	0 to 300	30 to 70	0.001 @ 10 µA DC	High resolution	KC2407
300	2600 to 3200	30 to 90	0.008 @ 100 µA DC or 1000 Ft. L.	High brightness; encapsulated anode	KC2408
400	3000 to 4400	35 to 70	0.012 @ 25 µA DC	Tightened face plate tolerances	KC2417
300	0 to 425	28 to 72	0.018 @ 50 µA DC	Ruggedized	KC2421
300	0 to 400	15 to 45	0.008 @ 1000 Ft. L. (P20)	Space-saver; high brightness; encapsulated anode, 300 mA heater	KC2439

SPECIAL CLASSIFICATIONS

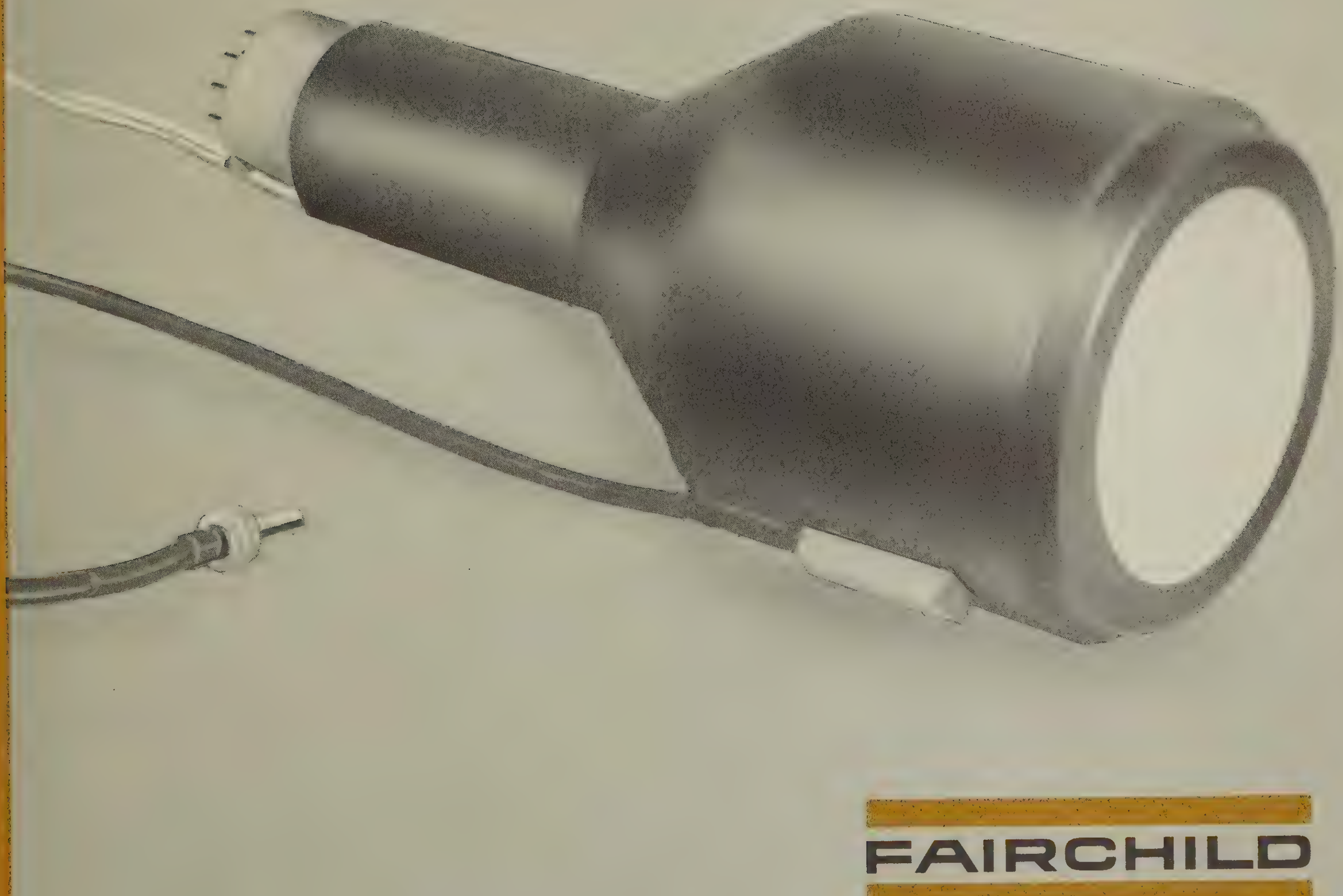
Specific information on these tube types is given in the tube data chart which is arranged in numerical order.

HIGH RESOLUTION TYPES			LOW GRID DRIVE TYPES		SPACE SAVERS
Electrostatic Deflection	Magnetic Deflection		Electrostatic Deflection	Magnetic Deflection	Magnetic Deflection
K2023	5CEP-	K2176	12AMP-	K1635	3AGP-
K2202	5CKP-	K2208	12AQP-	K1737	5BCP-
K2252	K1726	K2222	K1868	K1887	5BRP-
	K1828	K2226	K2056	K1898	7AQP-
	K1849	K2230	K2206	K1899	10ANP-
	K1871	K2236	K2232	K1921	12AWP-
	K1963	K2268		K1963	B1191
	K1970	K2269		K1987	K1635
	K1971	K2270		K1988	K1737
	K1972	KC2287		K1989	K1887
	K1994	KC2301		K1994	K1898
	K2054	KC2304		K2195	K1899
	K2078	KC2307		K2207	K1921
	K2101	KC2327			K1987
	K2111	KC2347			K1988
	K2115	KC2349			K1989
	K2155	KC2354			K1994
	K2159	KC2355			K2195
	K2160	KC2366			K2237
	K2161	KC2373			K2272
	K2162	KC2380			K2281
					K2282
					KC2301

ALPHA-NUMERIC READ-OUT TUBES	FIBER OPTIC TUBES		FLYING SPOT SCANNERS	
Magnetic Deflection	Electrostatic Deflection	Magnetic Deflection	Magnetic Deflection	
7AJP-	K2252	K2155	5AUP-	K2078
19WP-		K2159	5CEP-	K2101
K1709		K2160	5CKP-	K2111
K2005		K2226	5ZP-	K2161
K2101		K2236	7BCP-	K2162
K2121		K2268	K1726	K2208
K2159		K2269	K1828	K2222
K2166		K2270	K1849	KC2301
K2176		KC2287	K1871	KC2304
K2198		KC2366	K1970	KC2307
K2230		KC2378	K1972	KC2312
KC2355			K1993	KC2349
				KC2355

SECTION II

DU MONT STORAGE TUBES



FAIRCHILD

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DU MONT DIRECT-VIEW STORAGE TUBES

Du Mont, with the greatest experience in the industry in the field of Direct-View Storage Tubes, offers a line of Standard tubes characterized by excellent mechanical and electrical stability. These tubes have a wide variety of capabilities. In addition to those listed below, Du Mont has created a number of special purpose Direct-View Storage Tubes.

TUBE TYPE	6866	7033	7183	7222	7268A*	7315	7423	7448	8124
Max. Diameter (Inches)	5	5-1/4	5.19	5-1/4	5-1/4	5-1/4	5-11/32	5-1/4	10-1/2
Max. Length (Inches)	15-1/2	11-1/2	11.62	15	16	13.64	12-1/16	13.64	20-3/4
Min. Useful Screen (Inches)	4	4	4	4	4	3.8	4	3.8	8
No. of Write Guns	1	1	1	1	2	1	1	1	2
Type of Focus	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.
Type of Deflection	Elec.	Mag.	Mag.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.
Storage Time (Min.)	20 sec.	15 sec.	20 sec.	20 sec.	15 sec.	20 sec.	20 sec.	20 sec.	3 min.
Writing Speed Min. Inches/Sec.	150,000	20,000	20,000	30,000	36,000	3000	27,000	150,000	200,000
Erase Uniformity	0.4	0.4	0.5	0.4	0.4	0.4		0.4	0.5
Erase Time Max. msec.	30	250	200	250	50	60	20	60	100
Viewing Screen KV	10	8	8.5	10	10	10	8.5	10	10
Brightness Min. Ft. L.	1000	1000	1500	2000	2500	1000	4000	1000	600
Resolution Lines/Inch	50	50	50	60	70	50	25	50	40
Potted (Yes or No)	No	No	No	No	Yes	No	No	No	No
Potted — H V Lead (Yes or No)	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Br. Levels (Half tones)	5	5	5	5	5	5	4	5	6
Backing Electrode Volts	5	5	0	2	2	2	10	2	0 to 25
Collector Volts	210	120	220 to 250	120	265	150	180	150	200
Collimator Volts, E	50 to 150	20 to 40	40 to 100	30 to 50	50 to 150	30 to 90	20	30 to 90	15 to 50
Collimator Volts, D						10 to 40	30	10 to 40	30 to 65
Accelerator Volts (W&V)	100	80	40 E_{c2} (V) 100	100	100	125	0 (W)	125	175†
Grid No. 1 Volts (V)	0 to –750	0 to –30	0 to –75	0 to –45	0 to –50	0 to –60	60 (#)	0 to –60	0 to –100
Cathode Volts (V)	0	0	0	0	0	0	0	0	0
Cathode Volts (W)	–2400	–2500	–2500	–2000	–2500	–1875	–540	–1875	–2500
Grid No. 1 Volts (W)	–2438 to –2515	–2535 to –2590	–2530 to –2630	–2030 to –2060	–2560 to –2600	–1930 to –1970	–570 to –600	–1930 to –1970	–2580 to –2620
Focus Volts (W)	–1700 to –2050	–1750 to –2150	–1575 to –2075	–1340 to –1720	–2075 to –2425	–1125 to –1525	–390 to –465	–1125 to –1525	–1750 to –1980
Deflection Factors (W) v/KV/Inch D1D2	28 to 38			23 to 39	32 to 40	36 to 48	54 to 65	36 to 48	28 to 40
D3D4	28 to 38			23 to 39	32 to 40	35 to 47	52 to 63	35 to 47	28 to 40

* With integral shield

† 105, writing gun

Anode No. 1, Anode No. 4 90 v.

△ Anode No. 1

Information on these, and on our custom-design facility, is available on request.

K1696	K1826	K1850	K1895	K1938	K2060	K2112*	K2216A*	KS2298*	KS2329*	TUBE TYPE
4	10 - 1/2	10 - 1/2	20 - 3/16	2 - 11/16	10 - 1/2	5 - 9/16	5.67	10 - 7/8	11 - 7/8	Max. Diameter (Inches)
11	18 - 11/16	20 - 3/4	35 - 1/2	9 - 11/16	20 - 3/4	13 - 5/8	11 - 1/2	20 - 3/4	20 - 3/4	Max. Length (Inches)
3 - 1/4	8	8 - 1/2	18	1 - 7/8	8	3.8	4	8	9	Min. Useful Screen (Inches)
1	1	2	2	1	2	1	1	1	1	No. of Write Guns
Mag.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Type of Focus
Mag.	Mag.	Elec.	Elec.	Elec.	Elec.	Elec.	Mag.	Elec.	Elec.	Type of Deflection
30 sec.	3 min.	3 min.	3 min.	2 min.	3 min.	20 sec.	15 sec.	30 sec.	30 sec.	Storage Time (Min.)
40,000	10,000	5000	10,000	2000	15,000	150,000	20,000	30,000	30,000	Writing Speed Min. Inches/Sec.
0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	Erase Uniformity
100	500	1500	500	50	200	40	40	200	200	Erase Time Max. msec.
7	10	10	10	8	10	10	8	8	8	Viewing Screen KV
1000	200	100	100	3000	200	1000	1600	50	100	Brightness Min. Ft. L.
30	50	40	20	50	40	50	60	40	60	Resolution Lines/Inch
No	No	No	No	No	No	Yes	Yes	Yes	Yes	Potted (Yes or No)
No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Potted — H V Lead (Yes or No)
4	6	4	4	4	4	5	5	4	4	Br. Levels (Half tones)
0 to 15	0 to 20	0 to 25	0 to 25	0 to 20	20	2	0 to 5	2 to 13	2 to 13	Backing Electrode Volts
125	200	200	200	125	200	150	120	200	200	Collector Volts
40	20 to 55	20 to 50	100 to 150	25	10 to 50	30 to 90	20 to 40	10 to 60	10 to 60	Collimator Volts, E
	30 to 65	30 to 60	125 to 175	25	30 to 70	10 to 40		40 to 110	40 to 110	Collimator Volts, D
30	175	100	175	100	175	125	80	125	125	Accelerator Volts (W&V)
30 △	0 to –60	–20 to –60	–20 to –60	–20 to –40	–50	0 to –60	0 to –30	–20 to –60	–20 to –60	Grid No. 1 Volts (V)
0	0	0	0	0	0	0	0	0	0	Cathode Volts (V)
–450	–2500	–1000	–2500	–2000	–2500	–1875	–2500	–2500	–2500	Cathode Volts (W)
–485	–2575 to –2620	–1000 to –1100	–2500 to –2700	–2040 to –2075	–2575 to –2700	–1930 to –1970	–2535 to –2590	–2560 to –2620	–2560 to –2620	Grid No. 1 Volts (W)
	–1800 to –2150	–650 to –790	–1700 to –1900	–1400 to –1600	–1750 to –1975	–1125 to –1525	–1750 to –2150	–1600 to –1900	–1600 to –1900	Focus Volts (W)
		28 to 38	13 to 16	36 to 44	26 to 38	34 to 45		18 to 26	16 to 23	D1D2 Deflection Factors (W) v/KV/Inch
		31 to 41	13 to 16	36 to 44	26 to 38	34 to 45		18 to 26	16 to 23	D3D4

DU MONT
ELECTRICAL READOUT STORAGE TUBES

Du Mont also produces electrical readout storage tubes. Both single-ended and double-ended types are manufactured. Principal applications are for scan conversion, and for data transmission and storage with random and repetitive access.

ELECTRICAL INPUT, ELECTRICAL OUTPUT STORAGE TUBES

TUBE TYPE	K2224	K2225	KS2345
Max. Diameter (Inches)	3	3	3
Max. Length (Inches)	23-1/8	13-1/2	13-3/4
Gun Type	Double-ended	Single-ended	Single-ended
Type of Focus	Elec. or Mag.	Elec. or Mag.	Elec. or Mag.
Type of Deflection	Mag.	Mag.	Mag.
Resolution — Lines (Min.)	1000	1000	1000
Half Tones	5	5	5
Collector Volts	500	750	750
Collimator Volts, No. 1	300 (Write)	750	750
Collimator Volts, No. 1 (Read)	500		
Collimator Volts, No. 2	300 (Read)	225 to 425	400
Decelerator Volts	500	750	750
Storage Grid Volts	5	20	20
Accelerator Volts	3500	3500	3500
Grid No. 2 Volts	400	400	400
Grid No. 1 Cutoff Volts (Write)	—40	—15 to —30	—25
Grid No. 1 Cutoff Volts (Read)	—110	—15 to —30	—25
Cathode Volts (Write)	0	0	0
Cathode Volts (Read)	Variable	0	0
Focus Volts (Elec.)	400	120 to 420	400

SECTION III

DU MONT PHOTOMULTIPLIER TUBES

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DU MONT PHOTOMULTIPLIER TUBES

	MECHANICAL DATA						ELECTRICAL DATA			
							GENERAL			
JEDEC Tube Type	Average Tube Diameter (Inches)	Number of Stages	Type of Dynode Material	Minimum Window Dimensions (Inches)	Average Seated Height (Inches)	JEDEC Base Number	Spectral Response	Typ. Cathode Luminous Sensitivity μA/L Note 1	Typ. Anode Luminous Sensitivity (0 Cycles) (A/L)	
									105 V/S	145 V/S
6362	3/4	10	AgMg	1/2		Potted	S11	50	7.5	
6365	3/4	6	AgMg	1/2	2-3/16	E9-37	S11	50		.15 @ 150 V/S
6935	3/4	10	CsSb	1/2		Potted	S11	50	15	
7860	3/4	10	AgMg	1/2		Potted	S11	50	7.5	
6467	1-1/4	10	AgMg	1	4	B12-43	S11	60	13	120
8062	1-1/4	10	AgMg	1	4	B12-43	S1	18 Note 8	9 Note 8	
6291	1-1/2	10	AgMg	1-1/4	4-1/4	B12-43	S11	60	13	120
7065	1-1/2	10	CsSb	1-1/4	4-1/4	B12-43	S11	60	(45) Note 6	
6292	2	10	AgMg	1-1/2	4-7/8	B14-38	S11	60	13	120
6655A	2	10	CsSb	1.68	4-7/8	B14-38	S11	55	50 @ 83 V/S	
6810B/A	2	14	AgMg	1.68	6.69	B20-102	S11	60	875	
6911	2	10	AgMg	1-1/2	4-7/8	B14-38	S1	18 Note 8	9 Note 8	
7064	2	10	CsSb	1-1/2	4-7/8	B14-38	S11	60	(45) Note 6	
7664	2	10	AgMg	1-1/2	4-7/8	B14-38	S13	60	13	120
6363	3	10	AgMg	2-1/2	5-3/8	B14-38	S11	60	13	120
6364	5-1/4	10	AgMg	4-3/16	6-3/4	B14-38	S11	60	13	120

Tube Type										
K1303 Note 5	3/4	6	AgMg	1/2	2-3/16	E9-37	S11	50		.15 @ 150 V/S
K1404	3/4	6	AgMg	1/2	2-3/16	E9-37	S1	15 Note 8		.045 Note 8
K1451	3/4	6	AgMg	1/2	2-3/16	E9-37	S10	32		.096
K1528	3/4	10	AgMg	1/2		Potted	S10	32	4.8	
K1573	3/4	Diode		1/2	1	E9-37	S1	10		
K2065	3/4	Diode		9/16	1	E9-37	S11	30		
KM2328	3/4	10	AgMg	1/2		Potted	S20	75		8
K1566	.85	10	AgMg	1/2		Potted	S13	50	7.5	
K2142	.85	10	AgMg	1/2		Potted	S23			
K1361	1-1/4	10	CsSb	1	4	B12-43	S11	60	45 Note 6	
K1527	1-1/4	10	AgMg	1	4	B12-43	S10	32	6.88	64
K2190	1-1/4	10	AgMg	1	4	B12-43	S20	100 (min.)		10 (min.) @ 125 V/S
K2276	1-1/4	10	AgMg	1	4	B12-43	S1	35	10 @ 70 V/S	
K1295	2	12	AgMg	1-1/2	6	B14-38	S11	60	12	
K1305	2	10	AgMg	1-1/2	4-7/8	B14-38	S10	32	6.88	64

ELECTRICAL DATA

GENERAL				MAXIMUM RATINGS						
Avg. Cathode Radiant Sensitivity μA/μW Note 2	Max. Anode Dark Current 105 V/S 25°C. (μA)	Average Current Amplification 105 V/S	Average Current Amplification 145 V/S	Peak Cathode Current (μA) Note 3	Type No. with Standard Divider	Shield Number	Max. Volts Supply	Max. Volts Last Dynode to Anode	Max. Volts Cathode to First Dynode Note 4	JEDEC Tube Type
0.045	0.05	1.5 x 10^5		10	K1717	243-2	1300	125	250	6362
0.056	10 @ 150 V/S		3 x 10^3 @ 150 V/S	10	K1732	243-1	1300	150	300	6365
0.045	0.1	3 x 10^5		10	K1716	243-2	1300	125	250	6935
0.045	0.05	1.5 x 10^5		10	K2141	243-2	1300	125	250	7860
0.056	0.05	2.15 x 10^5	2 x 10^6	20	K1780	243-3	1800	200	400	6467
0.0016	15.	5 x 10^5		15	K1800	243-3	1600	200	400	8062
0.056	0.05	2.15 x 10^5	2 x 10^6	20	K1882	243-4	1800	200	400	6291
0.056	(0.05) Note 6	(7.5 x 10^5) Note 6		20	K1953	243-4	1300	150	300	7065
0.056	0.05	2.15 x 10^5	2 x 10^6	20	K1719	243-5	1800	200	400	6292
0.050	0.1 @ 20 A/L	9 x 10^5 @ 83 V/S		20		243-5	1250	250	300	6655A
0.056		12.5 x 10^6			KM2436		2400	400		6810B/A
0.0016	15.	5 x 10^5		20	K1942	243-5	1600	200	400	6911
0.056	(0.05) Note 6	(7.5 x 10^5) Note 6		20		243-5	1300	150	300	7064
0.056	0.05	2.15 x 10^5	2 x 10^6	20	K1943	243-5	1800	200	400	7664
0.056	0.05	2.15 x 10^5	2 x 10^6	20	K1831	243-8	1800	200	400	6363
0.056	0.05	2.15 x 10^5	2 x 10^6	20	K1799	243-9	1800	200	400	6364

										Tube Type
0.045	2 @ 150 V/S		3 x 10^3 @ 150 V/S	10	K2036	243-1	1300	150	300	K1303 Note 5
0.00103	15.0		3 x 10^3	5	K1821	243-1	1300	150	300	K1404
0.0115	0.05		3 x 10^3	10	K1915	243-1	1300	150	300	K1451
0.0115	0.05	1.5 x 10^5		10		243-2	1300	125	250	K1528
							150			K1573
							150			K2065
0.064	0.02 (typ.) @ 145 V/S		1 x 10^5			243-2	1800	155	300	KM2328
0.045	0.05	1.5 x 10^5		10		243-30	1300	125	250	K1566
0.0015 (min.)	0.05	1.5 x 10^4	1.0 x 10^5	3	K2003	243-29	1300	125	250	K2142
0.056	0.05 Note 6	7.5 x 10^5 Note 6		20	K1977	243-3	1300	150	300	K1361
0.0115	0.05	2.15 x 10^5	2 x 10^6	20		243-3	1800	200	400	K1527
0.062	0.03 (typ.) @ 125 V/S		1.5 x 10^5 @ 125 V/S	10		243-3	2400	500	500	K2190
0.0032	1.5 @ 10 A/L	3 x 10^5 @ 70 V/S		15	KM2335	243-3	1200	200	400	K2276
0.056	3.0	2 x 10^5		20		243-6	1800	200	400	K1295
0.0115	0.05	2.15 x 10^5	2 x 10^6	20		243-5	1800	200	400	K1305

DU MONT PHOTOMULTIPLIER TUBES

	MECHANICAL DATA						ELECTRICAL DATA			
							GENERAL			
									Typ. Anode Luminous Sensitivity (0 Cycles) (A/L)	
Tube Type	Average Tube Diameter (Inches)	Number of Stages	Type of Dynode Material	Minimum Window Dimensions (Inches)	Average Seated Height (Inches)	JEDEC Base Number	Spectral Response	Typ. Cathode Luminous Sensitivity μA/L Note 1	105 V/S	145 V/S
K1428	2	10	AgMg	1-1/2	4-7/8	B14-38	SPCL. Note 7	60	13	120
K1688	2	10	AgMg	1-1/2	5-1/4	B14-38	S23			
K1927	2	10	AgMg	1-1/2	4-7/8	B14-38	S20	160 (min.)	50	
K1961	2	10	AgMg	1-1/2	4-7/8	B14-38	S11	60 (min.)	13	120
K2199	2	10	CsSb	1-1/2	4-7/8	B14-38	S11	60	200	1500
K2227	2*	10	AgMg	1-1/2	4-7/8	B14-38	S11	60	13	120
K2244	2	14	AgMg	1.68	6-3/4	B20-102	S20	150		4000
K2284	2	10	CsSb	1-11/16	5-1/2	B14-38	S11	70		70 @ 125 V/S
KM2290	2	10	AgMg	1-1/2	4-7/8	B14-38	S1	35	10 @ 70 V/S	
KM2294	2**	9	AgMg	0.6	4-7/8	B14-38	S23			
KM2334	2	13	CsSb	1-1/2	5-3/4	B20-102	S11	70	2800	7000
KM2356	2*	10	AgMg	1-1/2	4	B14-38	S11	60	13	120
KM2357	2**	9	AgMg	0.6	4-7/8	B14-38	S20			
KM2433	2	10	AgMg	1-1/2	4-7/8	B14-38	S20	90 (min.)	30	
K1213	3	12	AgMg	2-11/16	6-3/8	B25-139	S11	60	12 Note 9	
K1390	3	10	CsSb	2-1/2	6-3/8	B14-38	S11	60	45 Note 6	
K1485	3	10	AgMg	2-1/2	5-3/8	B14-38	S1	18 Note 8	9 Note 8	
K2167	3	10	AgMg	2-1/2	5-3/8	B14-38	S20	150	6	15 (min.)
K2242	3*	10	AgMg	2-1/2	5-3/8	B14-38	S11	60	13	120
K2253	3	10	CsSb	2-1/2	5-3/8	B14-38	S11	60	200	1500
K2173	5	10	AgMg	4-3/16	6-3/4	B14-38	S20	150	6	15 (min.)
KM2368	5	14	AgMg	4-3/16	9	B20-102	S11	60	875	
K1209	5-1/4	12	AgMg	4-3/16	7-3/4	B25-139	S11	60	12 Note 9	
K1391	5-1/4	10	CsSb	4-3/16	6-3/4	B14-38	S11	60	45 Note 6	
K1384	12-1/2	12	AgMg	11-1/4	11-3/4	B25-139	S11	40	32	
K1328	15-7/8	12	AgMg	14	13-1/4	B25-139	S11	40	32	
K1386	20-9/16	12	AgMg	19-1/4	17-17/32	B25-139	S11	40	32	

* Specially ruggedized

** Tube diameter is 2″; cathode is 5/8″ square

NOTES:

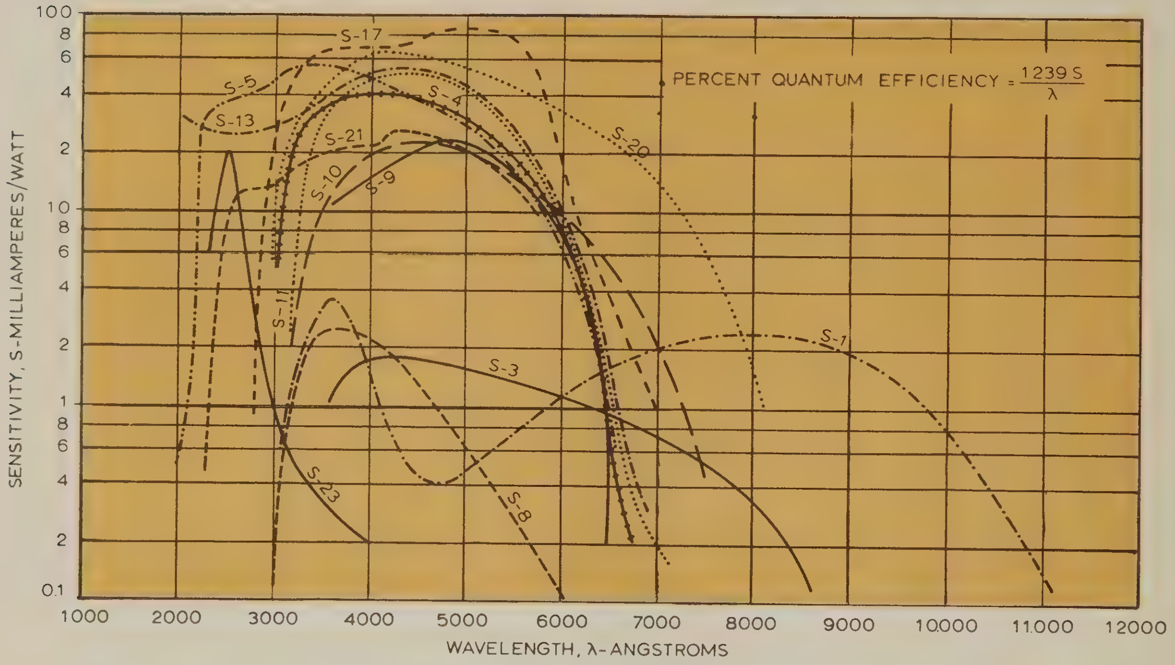
1. The cathode luminous sensitivity is measured at 210 volts, 0 cycles between cathode and all other electrodes.
2. Cathode radiant sensitivity is measured at maximum response at 210 volts between cathode and all other electrodes.
3. The cathode current given here is that current at which the response of the cathode current ceases to be a linear function of the light intensity because of cathode resistance. In general, the cathode current must be kept well below this value in order to satisfy the maximum ratings on the anode current.

ELECTRICAL DATA

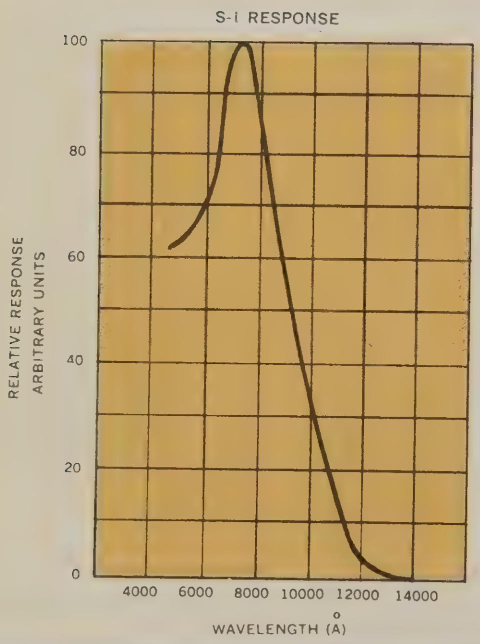
GENERAL				MAXIMUM RATINGS						
Avg. Cathode Radiant Sensitivity μA/μW Note 2	Max. Anode Dark Current 105 V/S 25°C. (μA)	Average Current Amplification		Peak Cathode Current (μA) Note 3	Type No. with Standard Divider	Shield Number	Max. Volts Supply	Max. Volts Last Dynode to Anode	Max. Volts Cathode to First Dynode Note 4	Tube Type
		105 V/S	145 V/S							
0.056	0.05	2.15 x 10^5	2 x 10^6	20		243-5	1800	200	400	K1428
.0015 (min.)	0.05	1.5 x 10^4	1 x 10^5	3	K2122	243-5	1800	200	400	K1688
0.064 (min.)	0.015 @ 50 A/L	2.75 x 10^5		10	KM2463	243-5	1800	500	500	K1927
0.056	0.05	2.15 x 10^5	2 x 10^6	20		243-5	1800	200	400	K1961
0.056	0.04 @ 200 A/L	3 x 10^6	25 x 10^6	20		243-5	1300	200	400	K2199
0.056	0.05	2 x 10^5	2 x 10^6	20		243-5	1800	200	400	K2227
0.064	0.75 @ 145 V/S		30 x 10^6	20			3000	500	500	K2244
0.056	0.025 @ 50 A/L		1 x 10^6 @ 125 V/S	20			2000	500	500	K2284
0.0032	2.0 @ 10 A/L	3 x 10^5 @ 70 V/S		20		243-5	1200	200	400	KM2290
0.025			5 x 10^4	3		243-5	1800	200	400	KM2294
0.058	0.4	4 x 10^7	1.1 x 10^8	20			2500	200	400	KM2334
0.056	0.05	2 x 10^5	2 x 10^6	20			1800	200	400	KM2356
0.68			1.3 x 10^5	3		243-5	1800	200	400	KM2357
0.058 (min.)	0.01 @ 30 A/L	2.75 x 10^5		10		243-5	1800	500	500	KM2433
0.056	3.0 Note 9	2 x 10^5 Note 9		20		243-7	1800	200	400	K1213
0.056	0.05 Note 6	7.5 x 10^5 Note 6		20		243-7	1300	150	300	K1390
0.0016	15.0	5 x 10^5		20		243-8	1600	200	400	K1485
0.064	0.03		2 x 10^5	30		243-8	2000	500	400	K2167
0.056	0.05	2 x 10^5	2 x 10^6	30		243-8	1800	200	400	K2242
0.056	0.04 @ 200 A/L	3 x 10^6	25 x 10^6	30		243-8	1600	200	400	K2253
0.064	0.03		2 x 10^5	50		243-9	2400	500	400	K2173
0.056		12.5 x 10^6					2800	400		KM2368
0.056	3.0 Note 9	2 x 10^5 Note 9		20		243-10	1800	200	400	K1209
0.056	0.05 Note 6	7.5 x 10^5 Note 6		20		243-9	1300	150	300	K1391
0.04	3.0	8 x 10^5		30		243-42	1500	200	400	K1384
0.04	3.0	8 x 10^5		30	K1873	243-39	1500	200	400	K1328
0.04	3.0	8 x 10^5		30		243-43	1500	200	400	K1386

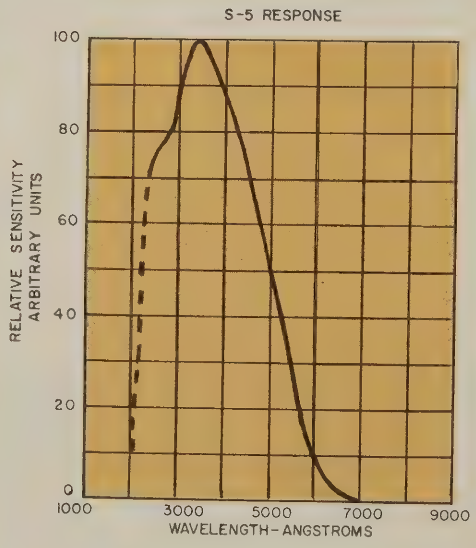
4. Supply voltage between cathode and first dynode should be 2 times supply voltage between succeeding dynodes.
5. The Du Mont Type K1303 is a ruggedized version of the Type 6365.
6. Measured at 90 volts per stage instead of 105 volts per stage.
7. Internal transparent conductive coating with an S11 response.
8. Normally the infrared sensitivity is approximately 10% of the luminous sensitivity.
9. Measured at 95 volts/stage, 0 cycles.

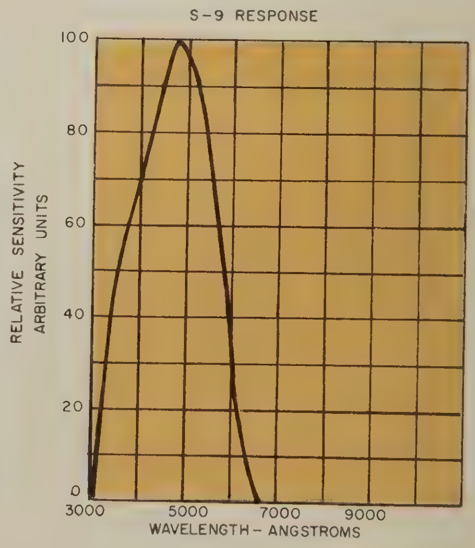
SPECTRAL RESPONSE CURVES FOR VARIOUS PHOTOCATHODES

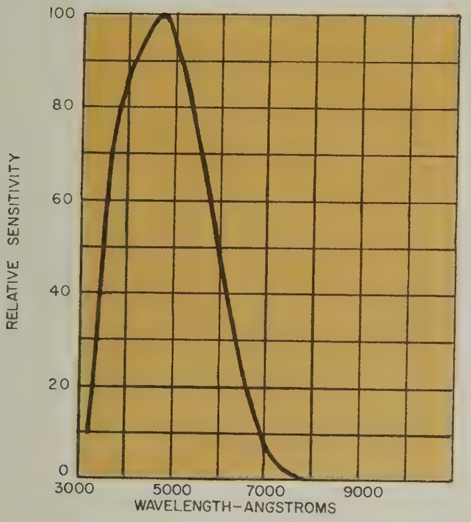


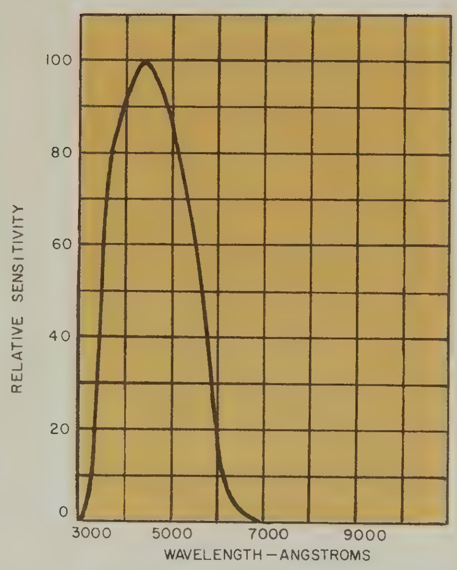
Comparison of spectral response of common photocathode surfaces. The visible portion of the spectrum lies between 3800 and 7600 Angstroms with ultra-violet extending into shorter wavelengths and infrared into longer wavelengths.

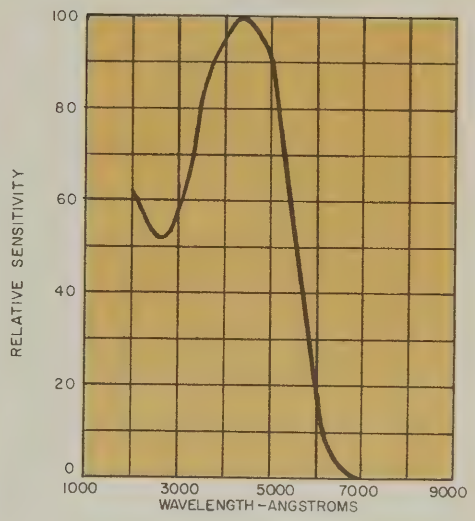

S-1 RESPONSE

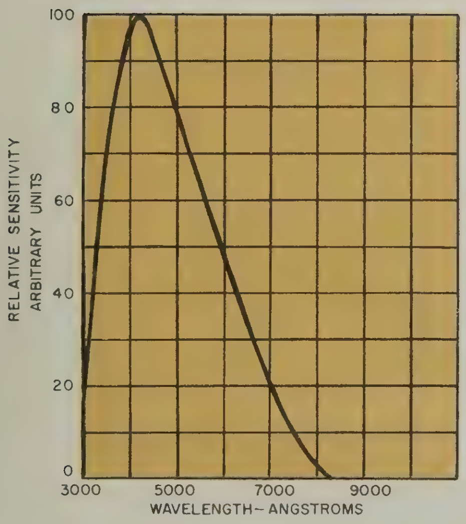

S-5 RESPONSE

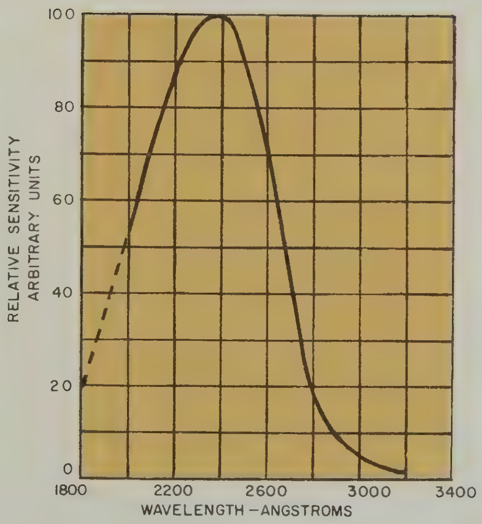

S-9 RESPONSE


S-10 RESPONSE


S-11 RESPONSE


S-13 RESPONSE


S-20 RESPONSE


S-23 RESPONSE

Spectral Response for Photocathode Surfaces

Designation	Peak Value, A	80% Range, A	10% Values, A
			Long Wavelength
S1	8000	7000-9000	10700
S5	3400	3000-4200	2000, 6000
S9	4800	4200-5600	3100, 6200
S10	4500	3800-5400	3200, 6900
S11	4400	3600-5200	3200, 6200
S13	4400	3500-5200	6200
			Long Wavelength
S20	4200	3600-5000	3000, 7500
S23	2400	2200-2600	1800, 2900

SPECIAL DESIGN SERVICES

POTTED VOLTAGE DIVIDERS

All Du Mont Photomultiplier Tubes can be supplied with a standard voltage divider (1 megohm between cathode and first dynode; 500K ohms between other dynodes). This integral divider system is potted to the tube with electrical access to photocathode, anode, and last dynode. In addition, special dividers, with specified load resistors, parallel capacitors, and leads to any electrode desired can be designed on special order. Type numbers of tubes incorporating standard dividers are indicated in the foregoing tables.

SPECIAL CHARACTERISTICS

Du Mont has had considerable experience in the development and production of photomultiplier tubes with capabilities beyond the "standard" in areas such as these, among others: Exceptional spectral response (2000 A to 15000 A); pulse height; pulse-height resolution; equivalent energy noise; optimum signal to noise ratio and signal to noise in signal ratio; equivalent noise input; and response mapping.

SPECIAL TUBE DESIGNS

Du Mont's unique photomultiplier tube research, design and development facility has already made major contributions in specialized tube designs with such accomplishments as:

Low Radioactive Tubes,

which facilitate low-level radioactivity studies because of their inherently low radioactivity (face plates of their 2-piece bulbs, are appreciably lower in radioactive contaminants than those of standard tubes);

High Cathode-Sensitivity Tubes,

which produce a substantially higher initial signal before multiplication than is normally available;

Low-Noise Tubes,

in which special design and manufacturing techniques produce tubes with exceptional signal to noise ratios; and

Solar-Blind Tubes,

for example, Types K2142 and K1688, which have ultraviolet response to the near exclusion of light in the visible spectrum, as defined by the S-23 curve.

In addition to these specific capabilities, Du Mont can provide modifications of existing tubes, or wholly new tubes, in which the following design parameters can be varied within broad ranges: Photocathodes, secondary emissive surfaces, face plate coatings (inside and outside), materials for envelopes and windows, window sizes, photocathode size, ruggedized structures and potted bases. Write for full details on custom design facilities.

SECTION IV

DU MONT POWER TUBES

FAIRCHILD

DU MONT LABORATORIES
DIVISION OF FAIRCHILD CAMERA AND INSTRUMENT CORPORATION
ELECTRONIC TUBE DIVISION • TWX 201 471-9665
750 BLOOMFIELD AVENUE • CLIFTON, NEW JERSEY

POWER TUBES (Triodes)

Du Mont manufactures a complete line of power tubes for Military, Industrial, and Broadcast applications. Power triodes; high voltage, high current diodes for rectifier and clipper diode applications; high voltage pulse modulators, are all available from stock. In addition, Gas Noise Sources, Ionization Gauges, and Vacuum Switches are available in a wide variety of designs. Experienced engineering and development facilities are located under one roof.

Tube Type	Description	CHARACTERISTICS					
		Heater		MU	Interelectrode Capacitances		
		Volts	Amps.		Cgp μμf	Cpk μμf	Cgk μμf
7C25	Forced air cooled triode, for industrial and communication applications.	11	29	25	13.2	1.7	14.5
5606	Water cooled triode for communication and industrial use as oscillator, amplifier or modulator. Replaces type 892.	22	60	50	30	1.5	16
5680	Forced air cooled triode, for communication use as an oscillator, amplifier or modulator.	13	36	25	12	1.8	15
5736	Forced air cooled triode for communication and industrial use as oscillator, amplifier or modulator. Integral air cooling fins for high overload protection.	6	60	22	16	0.8	19
5996	Forced air cooled triode specifically designed for industrial applications.	13	36	25	12	1.7	14.5
6009	Water cooled triode, integral water jacket version of 5996.	13	36	25	12	1.4	14.5
6366	Forced air cooled triode for industrial and communications applications; features a high efficiency low pressure drop radiator.	11	29	25	13	1.7	14.5
6367	Forced air cooled triode, similar to 6366 but allowing higher input power.	13	36	25	14.7	1.7	14.5
6399	Water cooled triode, integral water jacket version of 6366.	11	29	25	11.5	1.7	13.8
6400	Water cooled, integral water jacket version of 6367.	13	36	25	13.4	1.8	15.0
6422	Water cooled triode for use as an oscillator, amplifier or modulator.	7	85	90	25	1.5	32
6423	High speed air cooled triode for use as an oscillator, amplifier or modulator.	7	85	90	25	1.5	32
6423F	Air cooled triode for use as an oscillator, amplifier or modulator.	7	85	90	26	1.9	32
6424	Water and forced-air-cooled triode for use as an oscillator, amplifier or modulator.	7	120	20	27	2.0	34
6425	Forced-air-cooled triode for use as an oscillator, amplifier or modulator.	7	120	20	27	2.0	34
6425F	Forced-air-cooled triode for use as an oscillator, amplifier or modulator.	7	120	20	28	2.2	34
6623	Forced air cooled triode, similar to 5736, but features a high efficiency low pressure drop radiator.	6	60	22	16	1.0	19
6925	Forced air cooled triode for use as an oscillator, amplifier or modulator; features a high efficiency low pressure drop radiator.	13	36	17	21	1.9	18
6926	Water cooled triode for use as an oscillator, amplifier or modulator.	13	36	17	20.5	1.9	18
6926J	Water cooled, integral water jacket version of 6926.	13	36	17	20.5	1.9	18
7012	Forced air cooled triode for industrial and communication use as an oscillator, amplifier or modulator.	15	36	25	14.2	1.9	16.3

POWER TUBES FOR PULSE OPERATION

Tube Type	Description	CHARACTERISTICS						MAXIMUM			
		Filament		Amplification Factor	Interelectrode Capacitances			Plate Voltage Kv dc	Duty Cycle	Grid Voltage E_c Vdc	Grid Current I_c Adc
		Volts E_f	Current I_f		Input μμf	Output μμf	Grid-Plate μμf				
7C23	Forced air cooled triode specifically designed for high voltage pulse operation.	11	29	25	12.5	1.7	12.0	17.5	.005	—2000	0.010
5680	Forced air cooled triode specifically designed for high voltage pulse operation.	13	36	25	15.0	1.8	12.0	17.5	.030	—5000	0.150
6544	Forced air cooled tetrode, equipotential cathode, for use in pulse modulator service.	6	60	90	250	40	4.0	20	.0015	— 600	0.030
7012	Forced air cooled triode specifically designed for high voltage pulse operation.	15	36	25	16.3	1.9	14.2	17.5	.030	—5000	0.170
XD5	Forced air cooled or water cooled triode specifically designed for high voltage pulse operation.	14	38	25	15.0	1.8	12.0	35	.030	—5000	0.150
XD-32	Water cooled tetrode, unipotential matrix cathode for use in pulse modulator service. Tentative specifications.	6	233					65	.01	—2500	3.5
XD-99	Forced air cooled triode, specifically designed as a reliable 7899, for pulse operation.	8	142	33	46	0.7	24.5	20	.025	—1000	

MAXIMUM RATINGS						TYPICAL OPERATING CONDITIONS						
Plate Voltage Volts	Plate Current Amps.	Grid Current Amps.	Power Input KW	Plate Dissipation KW	Max. Freq. MC	Plate Voltage Volts	Plate Current Amps.	Grid Voltage Volts	Grid Current Amps.	Approx. Driving Power W	Power Output KW	Tube Type
5000	1.3	0.150	7	2.5	30	4500	1.2	–500	0.100	110	3.1	**7C25**
14,000	2.0	0.400	30	10.0	1.6	12,000	1.55	–1600	0.230	565	14	**5606**
6000	2.0	0.200	12	2.5	30	6000	1.4	–800	0.160	225	6	**5680**
5000	1.4	0.500	5	2.5	60	5000	1.0	–850	0.210	250	4.1	**5736**
6000	2.0	0.200	12	2.5	30	6000	1.4	–800	0.160	225	6	**5996**
6000	2.0	0.200	12	6.0	30	6000	1.4	–800	0.160	225	6	**6009**
5500	1.3	0.150	7	3.0	30	5000	1.2	–600	0.130	160	4	**6366**
6200	2.0	0.200	12	3.0	30	6000	1.4	–800	0.160	225	6	**6367**
6200	1.3	0.150	7	5.0	30	5000	1.2	–600	0.130	160	4	**6399**
9200	2.0	0.200	18	6.0	30	9000	2.0	–800	0.150	225	12	**6400**
12,500	2.5	0.500	30	20.0	30	12,000	2.1	–400	0.200	200	18.2	**6422**
12,500	2.5	0.500	30	12.5	30	12,000	2.1	–400	0.200	200	18.2	**6423**
12,500	2.5	0.500	30	10.0	30	12,000	2.1	–400	0.200	200	18.2	**6423F**
12,500	3.5	0.500	40	20.0	30	12,000	3.3	–1000	0.250	430	30.6	**6424**
12,500	3.5	0.500	40	12.5	30	12,000	3.3	–1000	0.250	430	30.6	**6425**
12,500	3.5	0.500	40	11.0	30	12,000	3.3	–1000	0.250	430	30.6	**6425F**
5000	1.4	0.500	5	2.5	60	5000	1.0	–850	0.210	250	4.1	**6623**
6500	2.0	0.250	12	3.0	60	6000	1.6	–1000	0.210	315	7.25	**6925**
6500	2.0	0.250	12	6.0	60	6000	1.6	–1000	0.210	315	7.25	**6926**
6500	2.0	0.250	12	6.0	60	6000	1.6	–1000	0.210	315	7.25	**6926J**
6000	2.3	0.230	13.8	2.5	30	6000	1.6	–800	0.180	225	6.7	**7012**

RATINGS					TYPICAL OPERATING CONDITIONS						
Pulse Width μs	Peak Plate Current Adc	Peak Cathode Current Adc	Peak Anode Voltage Kv	Plate Dissipation Kw	Plate Voltage E_b Kvdc	Grid Voltage E_c Vdc	Plate Current I_b Adc	Grid Current I_c Adc	Peak Power Output Kw	Notes	Tube Type
90	16	25	20	1.2	15	–750 (during pulse)	0.16	.0012	60 Kw	75 cfm for 1.2 Kw diss.	**7C23**
90	25	35	20	1.2	15.5	–750 (during pulse)	0.20	0.013	90 Kw	75 cfm for 1.2 Kw diss. .023 duty	**5680**
6	70	80	25	1.0	18	–500	0.100	0.008	1000 Kw	150 cfm for 1 Kw diss. at 0.8″ water	**6544**
90	30	40	20	1.2	15.5	–750 (during pulse)	0.20	0.013	90 Kw	75 cfm for 1.2 Kw diss. .023 duty	**7012**
90	30	45	40	1.5	30	–1500	0.25	0.003	750 Kw	Mount vertically. 75 cfm for 1.5 Kw diss. Mounting socket available from Du Mont.	**XD5**
25	750	1310	65	44	65	–1500	7.5	3.5	45,000 Kw	6 gpm for 44 Kw anode diss.	**XD-32**
100	85	100	35	7.5	15	–500	20		200 Kw	241 cfm for 7.5 Kw diss.	**XD-99**

RECTIFIER AND CLIPPER DIODES

		RECTIFIER OPERATION				
Tube Type	Description	Heater		Max. Peak Inverse Volt. KV	Peak Anode Current Amps.	Aver. Anode Current Amps.
		Volts	Amps.			
2-450	Radiation cooled — thoriated tungsten filament diode.	7.5	26.5	32	8	1.0
371B	Radiation cooled — thoriated tungsten filament diode.	5.0	10.3	25	1.5	0.300
561	Radiation cooled — bonded thoria filament diode.	11.5	15.25	33	2.7	0.860
576A	Radiation cooled — thoriated tungsten filament diode.	5.0	14.0	25	2.5	0.500
577	Radiation cooled — shorter version of type 371B.	5.0	10.3	25	1.5	0.300
5973	Radiation Cooled — thoriated tungsten filament diode	16	19.1	75	5	1.00
6303/X80	Radiation cooled — bonded thoria filament diode.	11.5	15.25	40	2.5	0.700
7030	Forced air cooled — thoriated tungsten filament diode.	13	36	25	20	6.0
7100	Forced air cooled — thoriated tungsten filament diode.	15	36	30	20	6.0
7131	Forced air cooled — thoriated tungsten filament diode.	13	36	40	15	3.0
7132	Water cooled — thoriated tungsten filament diode.	13	36	40	15	3.0
7133	Forced air cooled — thoriated tungsten filament diode.	13	36	80	15	3.0
7134	Water cooled — thoriated tungsten filament diode.	13	36	80	15	4.5
7135	Special cooling jacket for use with coolants other than water.	13	36	80	15	3.0
7402	Radiation cooled — bonded thoria filament diode.	11.5	15.25	33	2.7	0.860
7779/XD-56	Forced air cooled — thoriated tungsten filament diode.	13	36	25	30	6.0
8034	Forced air cooled — thoriated tungsten filament diode.	7.5	51	25	20	3.0
XD-18R	Forced air cooled — thoriated tungsten filament diode.	10	120	40	50	8.0
XD-18W	Water cooled — thoriated tungsten filament diode.	10	120	40	50	13.0
XD-27R	Forced air cooled — thoriated tungsten filament diode.	13	36	30	15	3.0
XD-27W	Water cooled — thoriated tungsten filament diode.	13	36	30	15	4.5
XD-47	Radiation cooled — shorter version of 2-450.	7.5	26.5	32	8	1.0
XD-49R	Forced air cooled — thoriated tungsten filament diode.	15	36	25	25	5
XD-49W	Water cooled — thoriated tungsten filament diode.	15	36	25	25	8
XD-66R	Forced air cooled — thoriated tungsten filament diode.	15	36	80	25	3.5
XD-66W	Water cooled — thoriated tungsten filament diode.	15	36	80	25	7.0

CLIPPER DIODE OPERATION							
Heater		Max. Peak Inverse Volt. KV	Peak Anode Current Amps.	RMS Anode Current Amps.	Tube Mounting	Notes	Tube Type
Volts	Amps.						
					Vertical	Tube envelope should not exceed 250°C. Max. anode dissipation 450 watts.	**2-450**
					Vertical	Anode temp. should not exceed 800°C. Max. anode dissipation 450 watts.	**371B**
11.5	15.25	33	50	1.25	Vertical	Max. anode temp. 800°C. Max. anode dissipation 450 watts.	**561**
5.4	15	25	12	0.800	Vertical	Anode temp. should not exceed 800°C. Max. anode dissipation 450 watts.	**576A**
					Vertical	Anode temp. should not exceed 800°C. Max. anode dissipation 450 watts.	**577**
16	19.1	33	20	2	Vertical	Max. anode dissipation 850 watts; max. glass temperature 300°C.	**5973**
12.2	15.5	33	50	1.25	Vertical	Max. anode temp. 800°C. Max. anode dissipation 550 watts.	**6303/X80**
13.75	38	30	50	6	Vertical	190 cfm for 2.5 KW dissipation.	**7030**
15	36	30	100	7.5	Vertical	190 cfm for 3.5 KW dissipation.	**7100**
14.5	40	40	150	6	Vertical	190 cfm for 3 KW dissipation. Formerly XD-2.	**7131**
14.5	40	40	150	8.0	Vertical	3 gpm for 5 KW dissipation. Formerly XD-2.	**7132**
14.5	40	80	150	6	Vertical	190 cfm for 3 KW dissipation. Formerly XD-64R.	**7133**
14.5	40	80	150	8.0	Vertical	3 gpm for 5 KW dissipation. Formerly XD-64W.	**7134**
14.5	40	80	150	6	Vertical	Specially designed for oil coolants — flow dependent on type coolant selected.	**7135**
11.5	15.25	33	50	1.25	Vertical	Anode temp. should not exceed 800°C. Max. anode dissipation 450 watts.	**7402**
13.75	38	25	75	6	Vertical	190 cfm for 3 KW dissipation.	**7779/XD-56**
8.25	56	25	70	4.5	Vertical	165 cfm for 3 KW dissipation.	**8034**
11.0	125	40	300	12.0	Vertical	200 cfm at 1″ water pressure for 6 KW dissipation.	**XD-18R**
11.0	125	40	300	21.0	Vertical	6 gpm for 15 KW dissipation.	**XD-18W**
14.5	40	30	150	6	Vertical	190 cfm for 3 KW dissipation.	**XD-27R**
14.5	40	30	150	8.0	Vertical	3 gpm for 5 KW dissipation.	**XD-27W**
					Vertical	Max. anode temp. 800°C. Max. anode dissipation 450 watts.	**XD-47**
16.2	39	25	160	7.5	Vertical	190 cfm for 3 KW dissipation.	**XD-49R**
16.2	39	25	160	12	Vertical	4 gpm for 6.5 KW dissipation.	**XD-49W**
16.2	39	80	160	5.0	Vertical	190 cfm for 3.5 KW dissipation.	**XD-66R**
16.2	39	80	160	10	Vertical	6 gpm for 12 KW dissipation.	**XD-66W**

10° E PLANE GAS NOISE TUBES

Tube Type	JEDEC Number	Replacement for	Frequency Band GC	Class of Operation	Fil. Current ma	Anode Current ma	Tube Voltage Drop Volts	Excess Noise db	Wave-guide Size
CNT-S15A-1		TD-31	2.6-3.95	DC & AC	300	250	85	15.6	RG 48/U
CNT-S15D-1	6358	TD-12	2.6-3.95	DC	300	250	80	15.6	RG 48/U
CNT-S15P-1		TD-38	2.6-3.95	Pulse	0	250	90	15.6	RG 48/U
CNT-S18A-1		TD-32	2.6-3.95	DC & AC	300	250	170	18.0	RG 48/U
CNT-S18D-1		TD-34	2.6-3.95	DC	300	250	165	18.0	RG 48/U
CNT-S18P-1		TD-56	2.6-3.95	Pulse	0	250	190	18.0	RG 48/U
CNT-C15A-1			3.95-8.20	DC & AC	170	250	75	15.6	RG 49/U & RG 50/U
CNT-C15D-1	6356	TD-10	3.95-8.20	DC	170	250	70	15.6	RG 49/U & RG 50/U
CNT-C15P-1		TD-39	3.95-8.20	Pulse	0	250	80	15.6	RG 49/U & RG 50/U
CNT-C18A-1			3.95-8.20	DC & AC	170	250	120	18.0	RG 49/U & RG 50/U
CNT-C18D-1		TD-48	3.95-8.20	DC	170	250	110	18.0	RG 49/U & RG 50/U
CNT-C18P-1		TD-43	3.95-8.20	Pulse	0	250	130	18.0	RG 49/U & RG 50/U
CNT-X15D-1		XD-9A	7.0-12.4	DC	170	200	60	15.6	RG 51/U & RG 52/U
CNT-X15P-1			7.0-12.4	Pulse	0	200	60	15.6	RG 51/U & RG 52/U
CNT-X15D-3	6357	TD-11	7.0-12.4	DC	170	200	85	15.6	RG 51/U & RG 52/U
CNT-X15P-3		TD-40	7.0-12.4	Pulse	0	200	85	15.6	RG 51/U & RG 52/U
CNT-X15D-4		XD-44A	7.0-12.4	DC	170	200	70	15.6	RG 51/U & RG 52/U
CNT-X15P-4			7.0-12.4	Pulse	0	200	70	15.6	RG 51/U & RG 52/U
CNT-X18D-1			7.0-12.4	DC	170	200	105	18.0	RG 51/U & RG 52/U
CNT-X18P-1			7.0-12.4	Pulse	0	200	105	18.0	RG 51/U & RG 52/U
CNT-X18D-3	6882	TD-26	7.0-12.4	DC	170	200	120	18.0	RG 51/U & RG 52/U
CNT-X18P-3			7.0-12.4	Pulse	0	200	145	18.0	RG 51/U & RG 52/U

90° H PLANE GAS NOISE TUBES

CNT-S15A-2	6782	TD-22	2.6-3.95	DC & AC	170	250	45	15.6	RG 48/U
CNT-S15P-2			2.6-3.95	Pulse	0	250	50	15.6	RG 48/U
CNT-S18A-2		TD-35	2.6-3.95	DC & AC	170	250	80	18.0	RG 48/U
CNT-S18P-2			2.6-3.95	Pulse	0	250	85	18.0	RG 48/U

90° E PLANE GAS NOISE TUBES

CNT-S15P-3			2.7-2.9	DC & Pulse	6.3 V @ 1.25A	75	30	15.6	RG 48/U
CNT-S18P-3		L-2000A	2.7-2.9	DC & Pulse	6.3 V @ 1.25A	75	40	18.0	RG 48/U

GAS NOISE SOURCES

Tube Type	Replacement Tube	Frequency Band	Class of Operation	Fil. Current, ma	Anode Current, ma	Tube Voltage Drop Volts	Excess Noise db	Mount Type	Waveguide Size
CNS-S90E-1	CNT-S15P-3	2.7-2.9	DC & Pulse	6.3V @ 1.25A	75	30	15.6	90° E Plane Single Ended	RG 48/U
CNS-S90E-2 **CEM-2000**	CNT-S18P-3	2.7-2.9	DC & Pulse	6.3V @ 1.25A	75	40	18.0	90° E Plane Single Ended	RG 48/U
CNS-X10E-1 **XD-9**	CNT-X15D-1	8.2-12.4	DC	170	200	60	15.6	10° E Plane Single Ended	RG 52/U
CNS-X10E-2 **XD-44**	CNT-X15D-4	7.0-10.0	DC	170	200	70	15.6	10° E Plane Single Ended	RG 51/U
CNS-X20E-1 **XD-34S**		8.5-9.6	DC	170	100	95	14.8	20° E Plane Double Ended	RG 52/U Spec. Flanges
CNS-X20E-2 **XD-34B**		8.5-9.6	DC	170	100	95	14.8	20° E Plane Double Ended	RG 52/U Spec. Flanges
CNS-V10E-2		50-75	AC	6.3V @ 1.25A	40	210	18.1	E Plane Double Ended	RG 98/U
CNS-V10E-4		50-75	AC	6.3V @ 1.25A	40	100	15.6	E Plane Double Ended	RG 98/U

IONIZATION GAUGES

Tube Type	Description	Tubulation	Measuring Range Torr.	Sensitivity μA/micron	Eb Volts DC	Ec Volts DC	Ic ma DC	Ef Volts AC	If Amps. AC
VG1A/1	Triode	24/40 ground glass inner joint	10^{-3} to 10^{-7}	100	—25	150	5	3.0 to 7.5	3.5 to 5
VG1A/2	Triode	3/4″ O.D.	10^{-3} to 10^{-7}	100	—25	150	5	3.0 to 7.5	3.5 to 5
VG1A/3	Triode	1/2″ O.D.	10^{-3} to 10^{-7}	100	—25	150	5	3.0 to 7.5	3.5 to 5
VG1A/4	Triode	3/8″ O.D.	10^{-3} to 10^{-7}	100	—25	150	5	3.0 to 7.5	3.5 to 5
CEM-75K	Bayard Alpert, burn-out proof filament	3/4″ O.D., Kovar	10^{-4} to 10^{-10}	100	—30	150	10	3 to 5	4 to 6
CEM-75N	Bayard Alpert, burn-out proof filament	3/4″ O.D., Nonex	10^{-4} to 10^{-10}	100	—30	150	10	3 to 5	4 to 6
CEM-75P	Bayard Alpert, burn-out proof filament	3/4″ O.D., Pyrex	10^{-4} to 10^{-10}	100	—30	150	10	3 to 5	4 to 6
CEM-75TTK	Bayard Alpert, twin tungsten filament	3/4″ O.D., Kovar	10^{-4} to 10^{-10}	100	—30	150	10	3 to 5	4 to 6
CEM-75TTN	Bayard Alpert, twin tungsten filament	3/4″ O.D., Nonex	10^{-4} to 10^{-10}	100	—30	150	10	3 to 5	4 to 6
CEM-75TTP	Bayard Alpert, twin tungsten filament	3/4″ O.D., Pyrex	10^{-4} to 10^{-10}	100	—30	150	10	3 to 5	4 to 6
CEM-6000	Cold cathode discharge	3/4″ stainless steel	25 x 10^{-3} to 10^{-7}	Operating voltage: 6000 volts DC, obtained from CEM-6000C control circuit					

QUALITY CONTROL

The Quality Control Group at Fairchild's Du Mont Laboratories is entrusted with the responsibility of verifying the quality of our products, and more importantly, insuring your ultimate satisfaction. Towards this end, Du Mont has equipped its quality control engineers with the best equipment available for the job. This equipment includes an in-house environmental testing laboratory. At Du Mont Laboratories, where quality is the prime consideration, quality control plays a major role in the over-all production plan.

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The Du Mont Laboratories' Ordering Department is designed to provide our customers with maximum service. Not only are your orders received and processed as quickly as possible, but the personnel in this department are specially trained to be able to provide you with up-to-the-minute information on your order.

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To provide you with the best service possible, Du Mont Laboratories maintains a large stock of all standard tube types. Delivery information on special tubes is furnished on request, and is normally dependent upon the specifications of the particular tube or tubes ordered.

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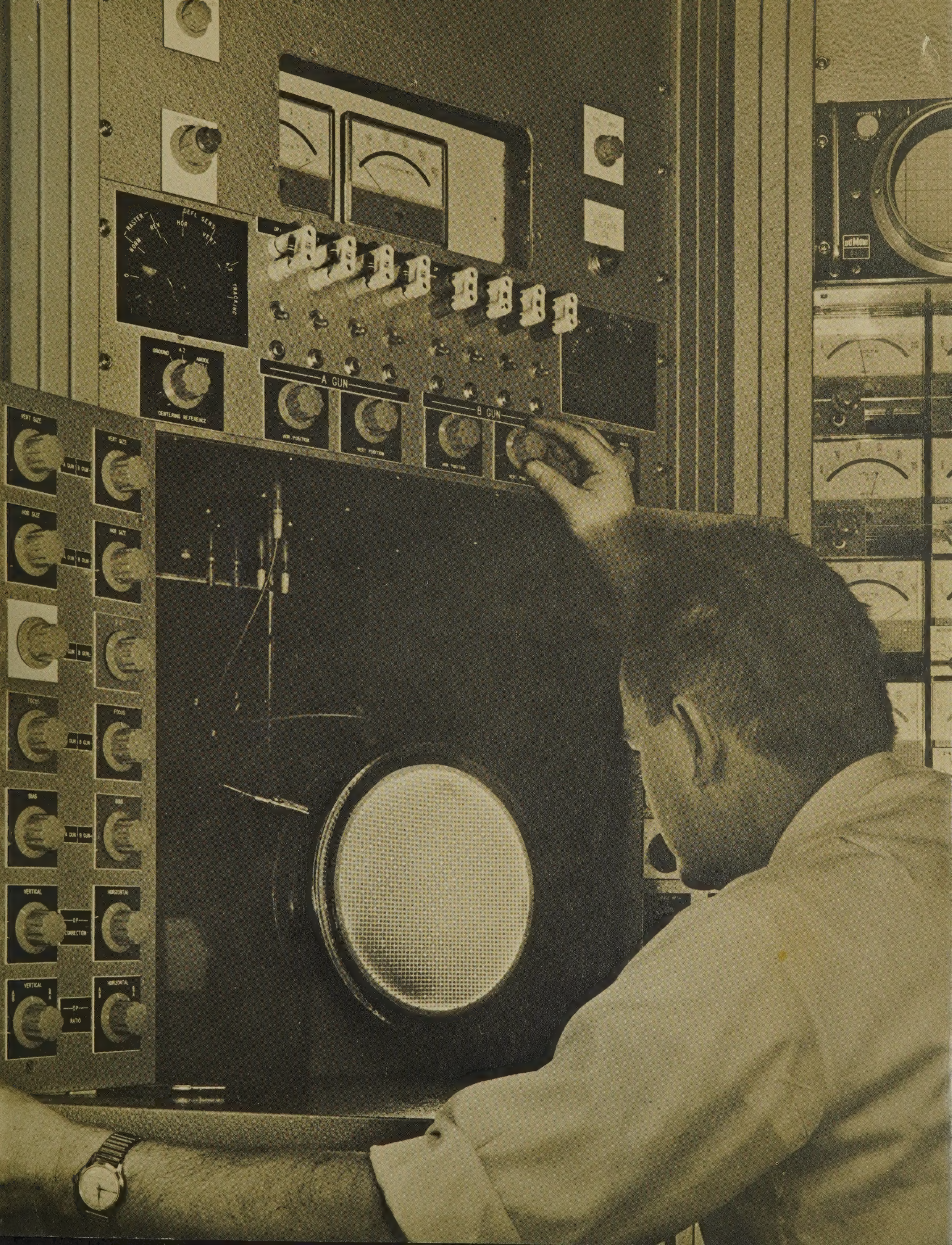
Engineering evaluation of direct-view storage tubes.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